STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	1	83

PROJ. NO. 254–87 KA–5554–01

STATE OF KANSAS

DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED

STATE HIGHWAY

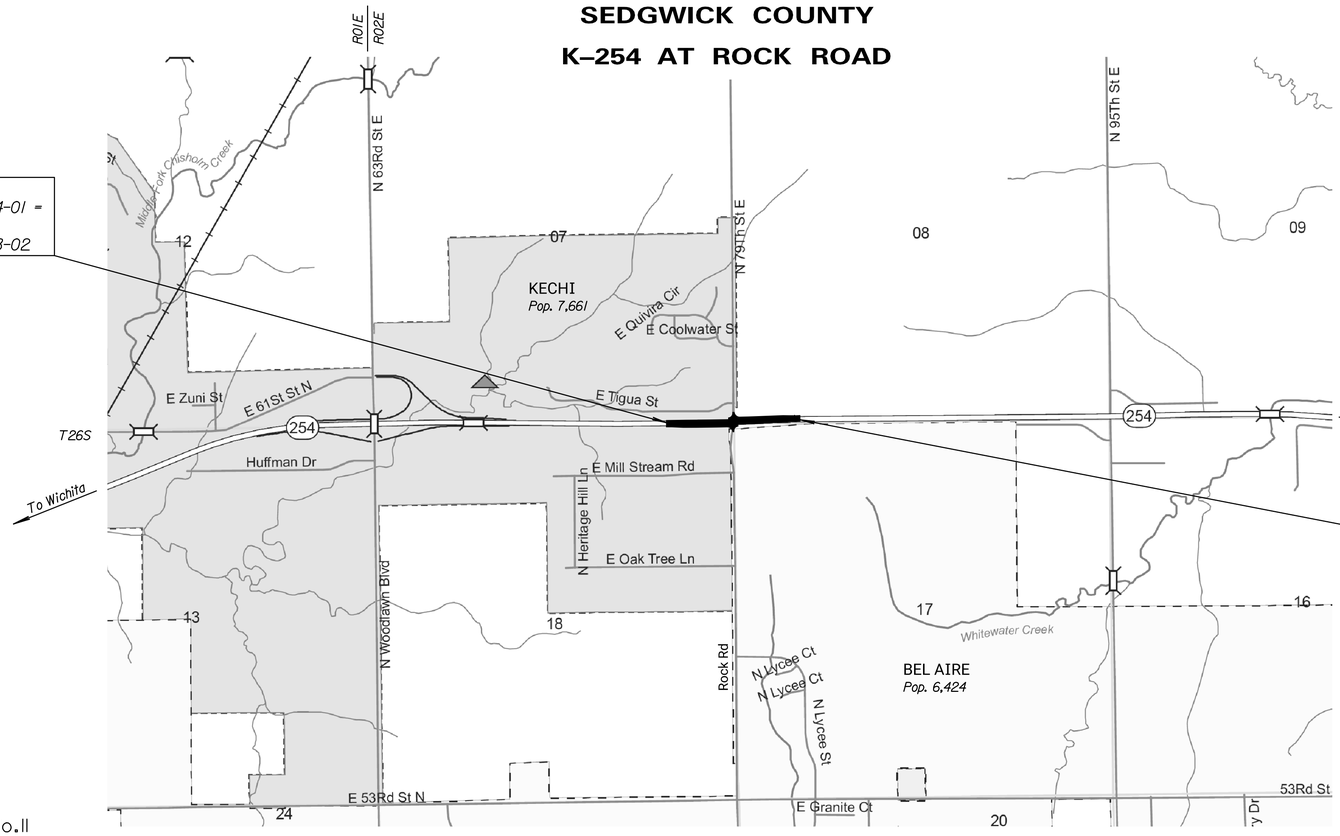
KANSAS PROJECT
SEDGWICK COUNTY

K–254 AT ROCK ROAD

GRADING AND SURFACING (ASPHALT)
SEEDING
SIGNING AND PAVEMENT MARKING

INDEX OF SHEETS

STA. 353+00.00 BEGIN
Proj. No. 254-87 KA-5554-01 =
Sta. 353+00.10
Proj. No. 254-87 KA-5058-02



STA. 373+00.00 END
Proj. No. 254-87 KA-5554-01 =
Sta. 373+00.10
Proj. No. 254-87 KA-5058-02

DESIGN DESIGNATION

AADT (2020) = 13,500
AADT (2040) = 21,500
DHV = 10%
D = 65%
T = 10%
V = 70 mph
C of A = Partial
Clear Zone = 34'
For Turning Movements See Sh. No.11

Note: K-254 Traffic to be carried thru construction. Rock Road to be closed during construction.

For construction sequence See Sh. No. 59

CONVENTIONAL SIGNS

COUNTY LINE		CENTER LINE OF PROJECT	50 1
CITY LIMITS		TERRACE	
STATE OR NATIONAL LINE		CULVERTS	
TOWNSHIP, SECTION or GRANT LINE		DROP INLET & STORM SEWER	
PROPERTY LINE	℄	ACCESS CONTROL	
HIGHWAY FENCE		POWER POLE	
EXISTING FENCE		TELEPHONE POLE	
GUARDRAIL		MARSH	
CONSTRUCTION LIMITS		HEDGE	
RIGHT OF WAY LINE		TREES	
TRAVELED WAY		PROFILE ELEVATION	1172.18
RAILROADS		STREAM or CREEK	

GROSS LENGTH OF PROJECT	2,000.00 FT. (Includes Equations)	
EXCEPTIONS	NONE	
NET LENGTH OF PROJECT	2,000.00 FT.	0.379 MILES
NET LENGTH OF BRIDGES	0.00 FT.	0.000 MILES
NET LENGTH OF ROAD	2,000.00 FT.	0.379 MILES

PLANS PREPARED BY
WILSON & COMPANY

Approved Dec 13, 2021
Date

State Transportation Engineer

By: Brian D. Gowey

Chief, Bureau of Transportation Safety & Technology

KANSAS DEPARTMENT OF TRANSPORTATION

	BY	DATE
SURVEY	Joseph L. Bowen - KDOT	2020
CADD TECHNICIAN	J. Ruiz / C. Nachbar - Wilson & Company	2020
DESIGNERS	K. Guenther - Wilson & Company	2020
SQUAD	C. Anderson (TS&T)	2020

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401rft-01.dgn

KDOT Graphics Certified 12-16-2020

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	2	83

Original

Dec 10, 2021

Name: Kyle Guenther
Co. Name: Wilson and Company
Plan Section: Road

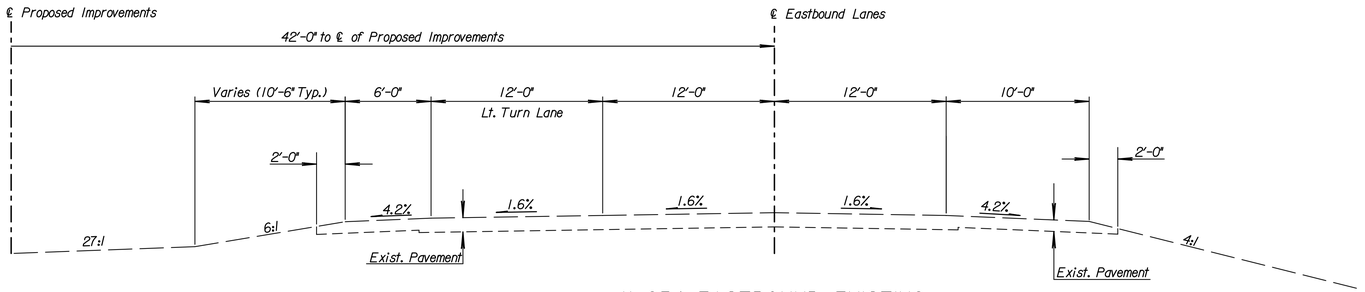
KANSAS DEPARTMENT OF TRANSPORTATION

Signature Seal Sheet

RD048

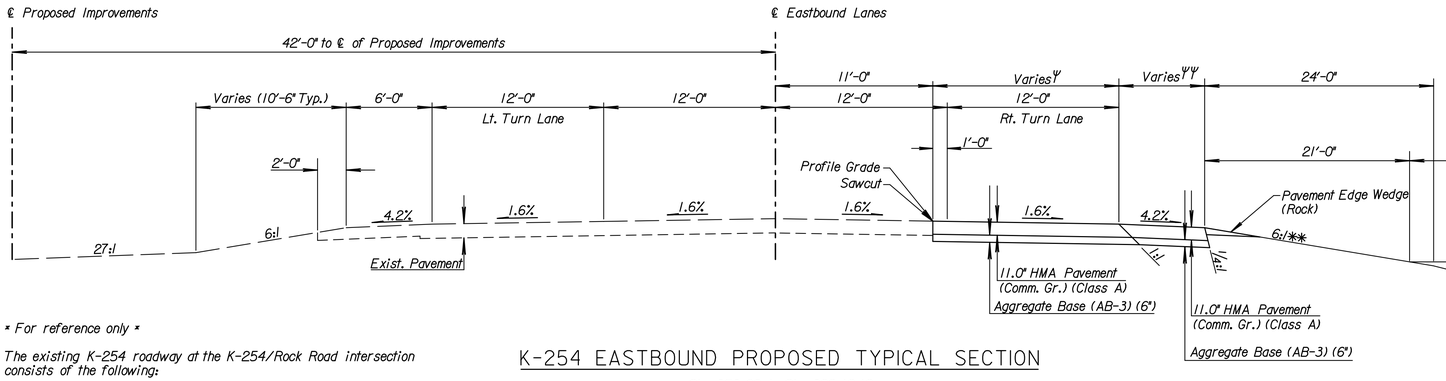
KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	3	83



K-254 EASTBOUND EXISTING

Sta. 353+00 to Sta. 363+69.62



* For reference only *

The existing K-254 roadway at the K-254/Rock Road intersection consists of the following:

2014	SR-12.5A	1.5" x 24'
1998	SM-1T	1.0" x 24'
1998	SM-2C	5.5" x 24'
1998	Unbound Drainable Base with Edge Drains	6.0" x 44'
1998	AB-3	7.0" x 44'
1998	LTSG	6.0" x 44'

Existing WB thickness is estimated to be 23.0" HMA

K-254 EASTBOUND PROPOSED TYPICAL SECTION

Sta. 353+00 to Sta. 362+12.12

Ψ Sta. 353+60.00 to 356+00.00 varies from 1.00' to 13.00'
Sta. 356+00.00 to 362+12.12 13.00'

ΨΨ Sta. 353+60.00 to 354+41.78 varies from 10.78' to 6.00'
Sta. 354+41.78 to 362+12.12 6.00'

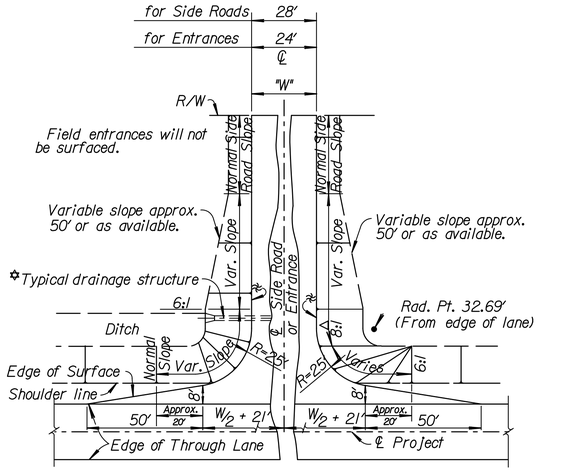
NOTE: Mainline clear zone controls from Sta. 353+60.00 to 354+41.78 then turn lane clear zone controls at Sta. 354+41.78 (30').

Note: See Intersection Details for variations. See Sh. No. 11

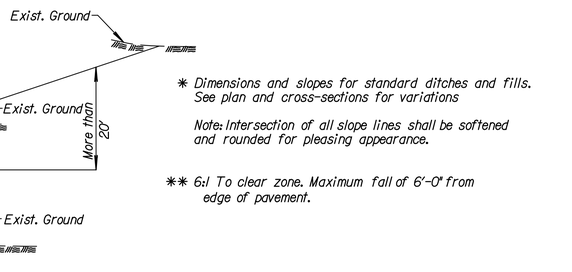
≈ On side roads and entrances which slope toward the highway, a low point approx. 6" deep shall be constructed to divert surface drainage into the highway ditch, unless otherwise shown on the plans.

✡ Normal Slope (but not steeper than 6:1) at approximate ℄ Structure or appropriate clear zone width.

△ 8:1 Slope at the appropriate clear zone shall apply to all mound entrances and mound side roads to 10' fill height. Normal Slope (but not steeper than 6:1) over 10' fill height.



FLARE OF SHOULDERS AT ENTRANCES AND SIDE ROADS



* Dimensions and slopes for standard ditches and fills. See plan and cross-sections for variations

Note: Intersection of all slope lines shall be softened and rounded for pleasing appearance.

** 6:1 To clear zone. Maximum fall of 6'-0" from edge of pavement.

SOIL FOR EMBANKMENT CONSTRUCTION: All soil used in the top 18" of the embankment shall conform to the following requirements: $10 \leq PI \leq 30$ and $20 \leq LL \leq 55$. Soils which contain substantial organic material, such as those classified as OL or OH according to the Unified Soil Classification System (ASTM D2487), shall not be used to construct the embankment or subgrade. The organic material may be used as select soil to cap the sideslopes of the embankment.

NO.	DATE	REVISIONS	BY	APP'D
21	1-25-13	Removed Slope, Pvmt. Edge	S.W.K.	J.O.B.
20	5-20-09	8:1/6:1 over 10' fill mound ent./sd.rd.	S.W.K.	J.O.B.
19	11-10-04	Changed slope labels to percent	S.W.K.	J.O.B.
18	5-10-00	Rev. Ditch Plug Slope 10:1	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION GRADING & SURFACING

RD600

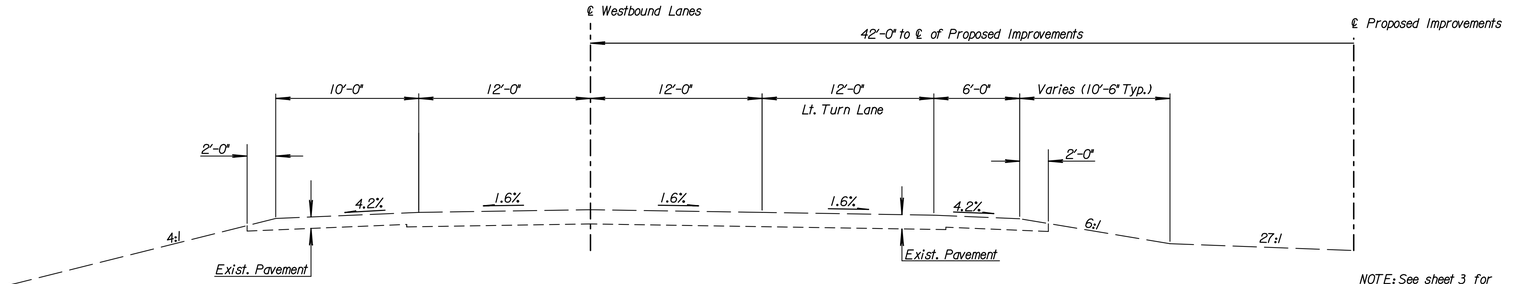
FHWA APPROVAL	5-21-2013	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED B.N.B.
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. W.L.H.

Drawn By : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA555401rts-01.dgn

CADconform Certify This File

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	4	83

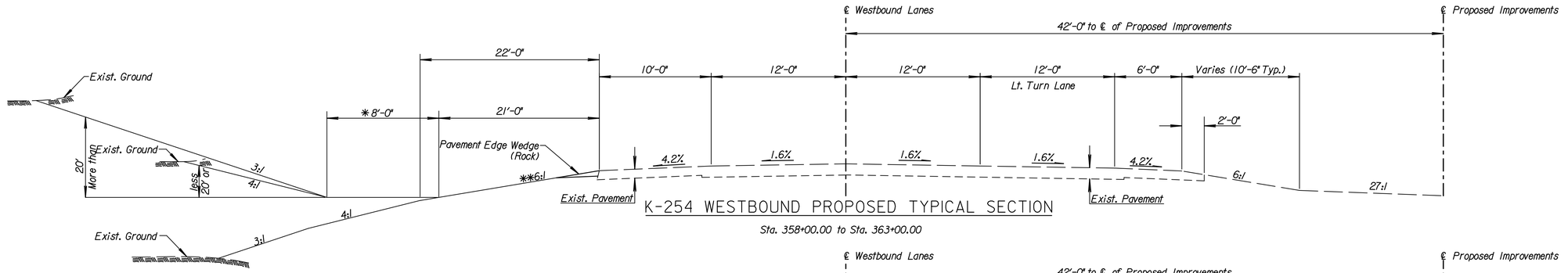
DATE	BY	
		REFERENCES NOTED
		REFERENCES CHECKED



K-254 WESTBOUND EXISTING

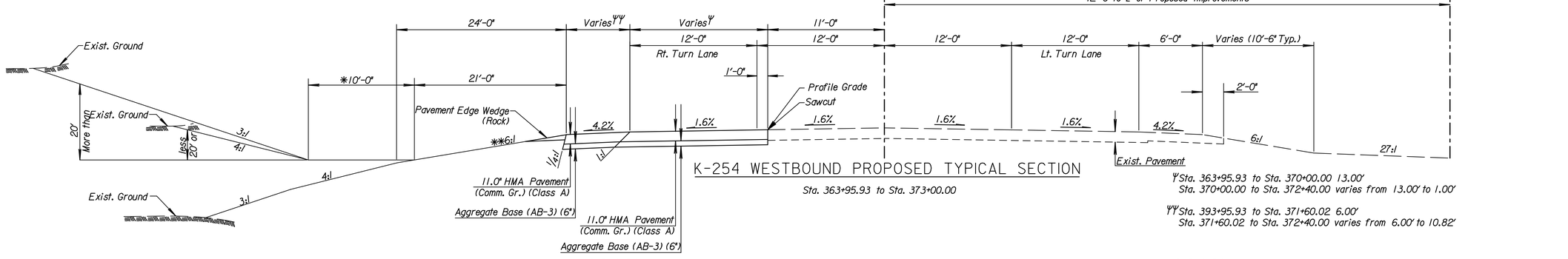
Sta. 358+00.00 to Sta. 373+00.00

NOTE: See sheet 3 for existing pavement information.



K-254 WESTBOUND PROPOSED TYPICAL SECTION

Sta. 358+00.00 to Sta. 363+00.00

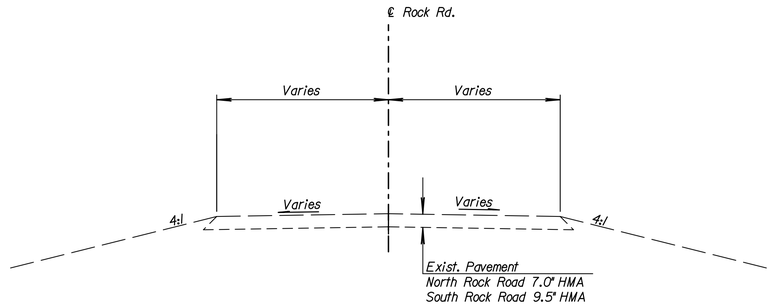


K-254 WESTBOUND PROPOSED TYPICAL SECTION

Sta. 363+95.93 to Sta. 373+00.00

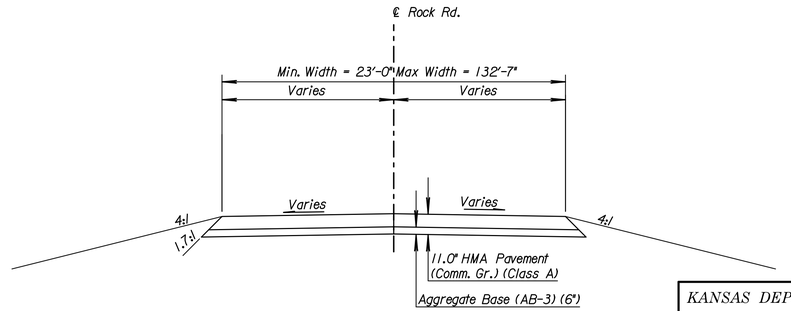
Ψ Sta. 363+95.93 to Sta. 370+00.00 13.00'
Sta. 370+00.00 to Sta. 372+40.00 varies from 13.00' to 1.00'

ΨΨ Sta. 393+95.93 to Sta. 371+60.02 6.00'
Sta. 371+60.02 to Sta. 372+40.00 varies from 6.00' to 10.82'



ROCK ROAD EXISTING

Sta. 48+58.44 to Sta. 49+46.98
Sta. 50+53.01 to Sta. 51+42.22



ROCK ROAD PROPOSED

Sta. 48+58.44 to Sta. 49+46.98
Sta. 50+53.01 to Sta. 51+42.22

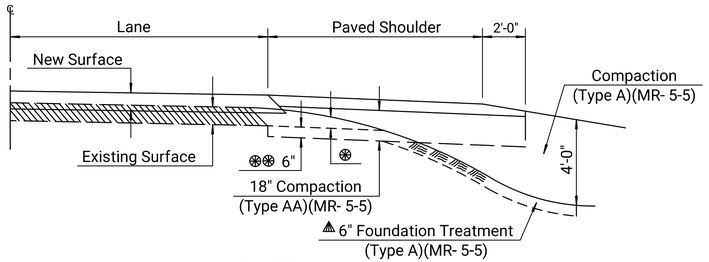
KANSAS DEPARTMENT OF TRANSPORTATION

K-254 WESTBOUND AND ROCK RD TYPICAL SECTIONS

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipwd0409707\KA555401rts-02.dgn

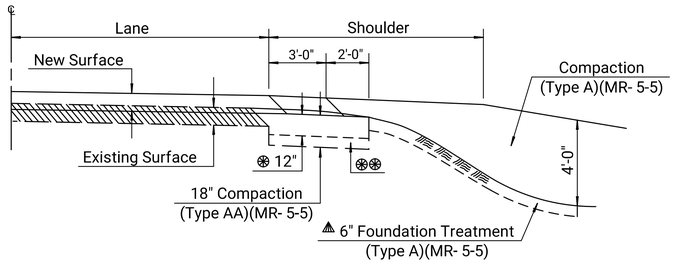
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	5	83

REHABILITATION



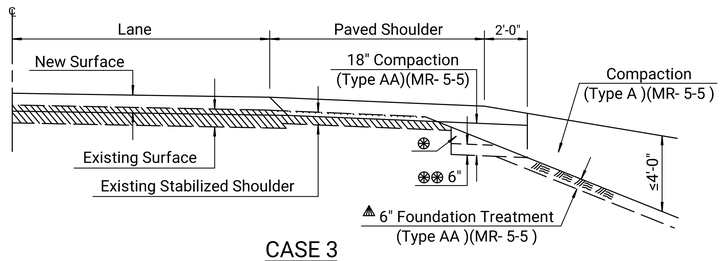
CASE 1

Overlay with Paved Shoulder



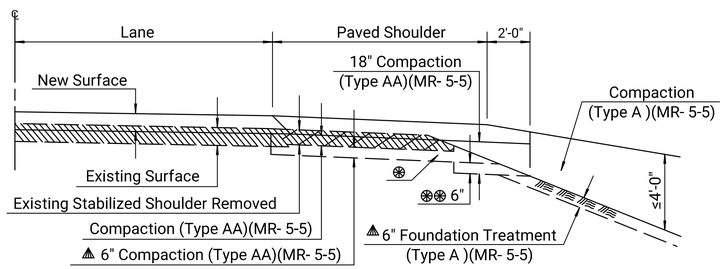
CASE 2

Overlay with Composite Shoulder



CASE 3

Overlay with Existing Paved Shoulder



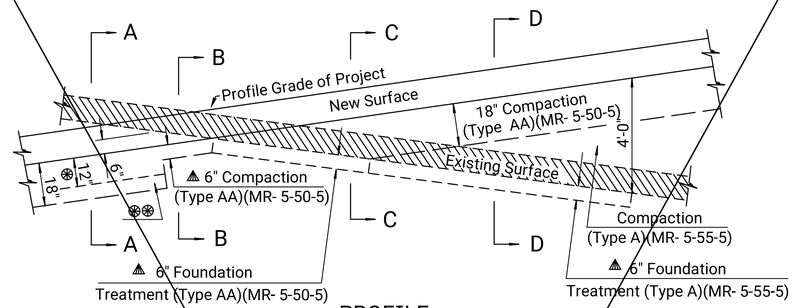
CASE 4

Overlay with Shoulder Replacement

❀ Excavation thru Cuts not Subgraded
❀❀ The lower 6" of Compaction is subsidiary.
⚠ Compaction of this material shall be subsidiary.

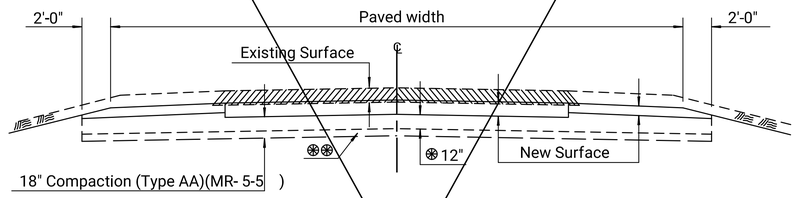
Note: These are 4 general cases. Specific compaction requirements are determined on a project-by-project basis.

RECONSTRUCTION

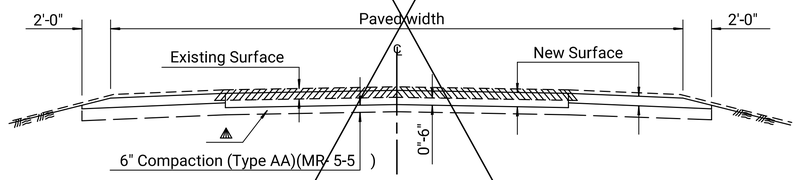


PROFILE

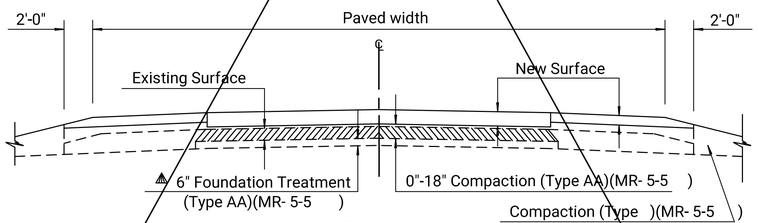
❀ Excavation thru Cuts not Subgraded
❀❀ The lower 6" of Compaction is subsidiary.
⚠ Compaction of this material shall be subsidiary.



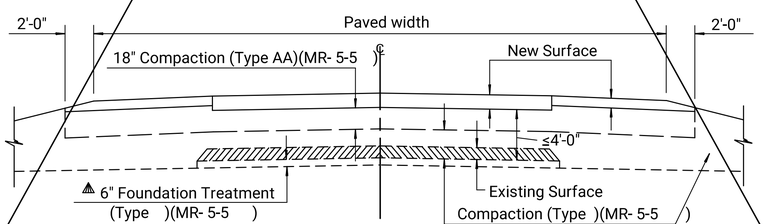
SECTION A-A



SECTION B-B

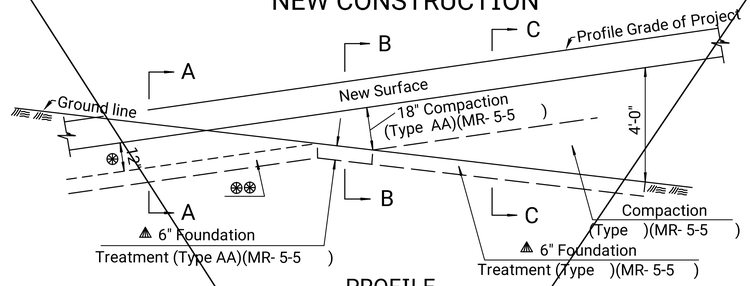


SECTION C-C



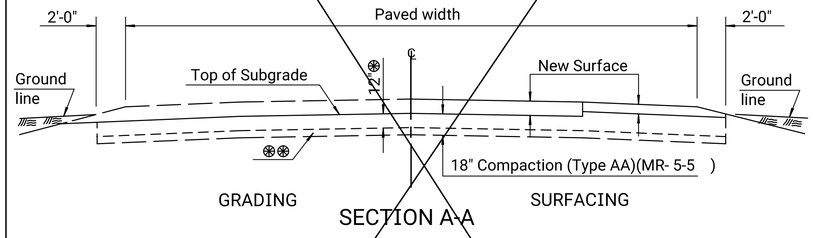
SECTION D-D

NEW CONSTRUCTION

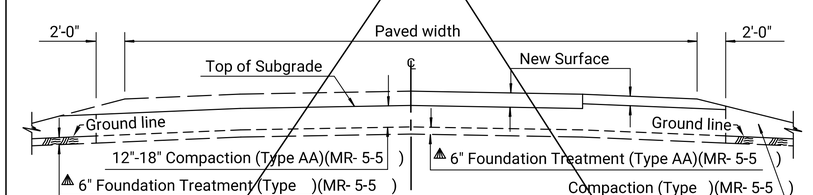


PROFILE

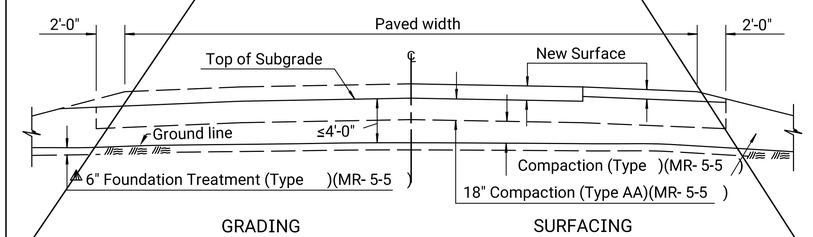
❀ Excavation thru Cuts not Subgraded
❀❀ The lower 6" of Compaction is subsidiary.
⚠ Compaction of this material shall be subsidiary.



SECTION A-A



SECTION B-B



SECTION C-C

General Note

For materials designated to be subgraded,compaction of soils, including shales, designated for backfill refer to Standard Drawing RD605A for details.

Unless otherwise noted on the Plans, compact all embankment, including side roads and entrances.

NO.	DATE	REVISIONS	BY	APP'D
5	10-17-1 1	Revised General Note	S.W.K.	J.O.B.
4	1-05-1 0	Added additional subsidiary comp.	S.W.K.	J.O.B.
3	2-16-05	Redrawn, Rev. Recon. Sec. C-C & D-D	S.W.K.	J.O.B.
2	5-29-98	Revised Reconstruction Section B-B	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

FOUNDATION TREATMENT & COMPACTION OF EARTHWORK

RD605

FHWA APPROVAL 12-5-1 1		APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

KDOT Graphics Certified 23 Mar 21

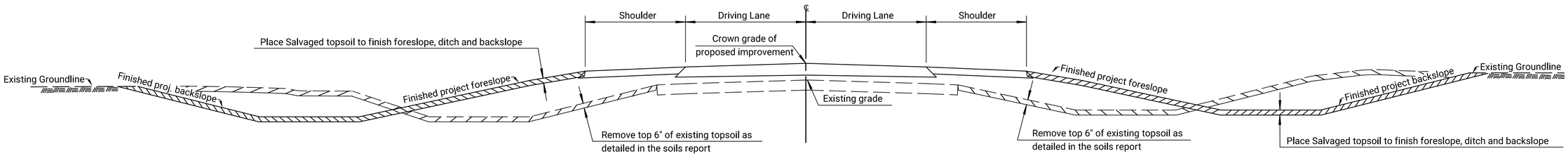
DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA5554\01rss605-01.dgn

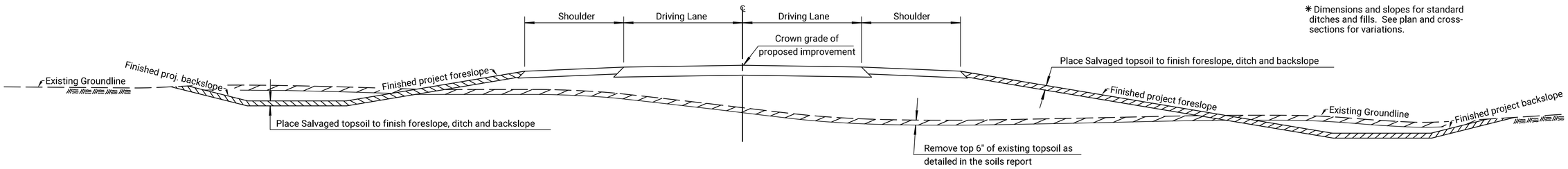
KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	6	83

GENERAL NOTE
Adjust the cut and fill sections to accommodate the placement of the salvaged topsoil such that after placement the cross section will be at the final grade as shown on the plans.
Salvaging, Stockpiling and Placing Topsoil bid as "Salvaged Topsoil" in Square Yards. See KDOT Standard Specifications for details.
Soften and round the intersection of all slope lines for pleasing appearance.



RECONSTRUCTION/REHABILITATION OF EXISTING ROADWAY
(Removal and Placement of Salvaged Topsoil)

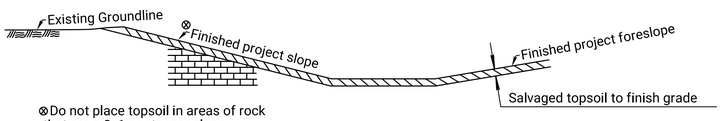


✱ Dimensions and slopes for standard ditches and fills. See plan and cross-sections for variations.

LEGEND
Topsoil to be Salvaged
Placement of Salvaged Topsoil

NEW ROADWAY ALIGNMENT
(Removal and Placement of Salvaged Topsoil)

Note: Method of showing backslope thru shallow rock or shale cuts at locations where rock protrudes a short height above the bottom of the ditch.



⊗Do not place topsoil in areas of rock that are a 3: 1 or steeper slope.

CUT SECTION

Note to Designer: Acceptable Topsoil locations on a project will be detailed in the Soils Report. The locations will be used in conjunction with the plans to measure a horizontal area in Sq. Yds of "Salvaged Topsoil" within the R/W limits.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1	12-16-09	Initial Release	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SALVAGED TOPSOIL

RD599A

FHWA APPROVAL 12-16-09		APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED B.N.B.
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. S.W.K.

KDOT Graphics Certified 10-06-2021

KDOT Graphics Certified

Drawn By : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA555401rss599a.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	7	83

GENERAL NOTE

THE GEOLOGICAL INFORMATION SHOWN ON THESE PLANS IS FROM STUDIES MADE IN THE FIELD AND REPRESENTS THE BEST INFORMATION AVAILABLE TO THE KANSAS DEPARTMENT OF TRANSPORTATION.

AT BORROW AREA LOCATIONS ADJACENT TO THE RIGHT OF WAY, UTILITY POLES MAY BE SET AT THE PERMANENT LOCATIONS PRIOR TO CONSTRUCTION AS APPROVED BY THE ENGINEER PROVIDED A MINIMUM VERTICAL CLEARANCE, IN ACCORDANCE WITH THE NATIONAL ELECTRICAL SAFETY CODE, IS OBTAINED. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND THESE POLES TO COMPLETE THE WORK.

ALL BORROW TO BE OBTAINED FROM AREAS PROVIDED BY THE CONTRACTOR SHALL BE APPROVED BY THE ENGINEER, BOTH AS TO SUITABILITY OF MATERIAL AND SITE LOCATION. LOCATIONS WHICH, IN THE OPINION OF THE ENGINEER, CONTAIN UNSUITABLE MATERIAL OR WILL LEAVE AN UNSIGHTLY APPEARANCE ON THE PROJECT WILL NOT BE APPROVED.

CHANNELS SHALL BE CUT AT BOX CULVERTS (UNLESS OTHERWISE NOTED) TO FLOW LINE ELEVATIONS AND TO A WIDTH OF ONE FOOT OUTSIDE OF EACH OUTSIDE WALL AND WITH SLOPES 2 TO 1 PRIOR TO CONSTRUCTION OF THE CULVERT.

EMBANKMENT QUANTITIES FOR INITIAL CONSOLIDATION AND SETTLEMENT SHOWN IN THE EARTHWORK QUANTITIES ARE SUBSIDIARY TO OTHER EARTHWORK ITEMS. MATERIAL FOR THE EMBANKMENT IS INCLUDED IN THE EXCAVATION QUANTITIES.

EXCAVATION REQUIRED FOR PLACING SELECT SOIL IS INCLUDED IN THE COMMON EXCAVATION QUANTITIES.

WHERE EASEMENTS ARE SHOWN ON RAILROAD RIGHT OF WAY, THE CONTRACTOR SHALL BE REQUIRED TO WORK AROUND AND NOT DISTURB THE RAILROAD COMMUNICATION OR SIGNAL POLES OR LINES.

EXCAVATION SHOWN TO BE WASTED SHALL BE WASTED ON SITES PROVIDED BY THE CONTRACTOR. THESE SITES SHALL BE APPROVED BY THE ENGINEER AS TO SUITABILITY, APPEARANCE, AND SITE LOCATION. LOCATIONS THAT, IN THE OPINION OF THE ENGINEER, WILL LEAVE AN UNSIGHTLY APPEARANCE WILL NOT BE APPROVED.

ALL TREES, HEDGE ROWS, SHELTERBELTS, AND WOODY SHRUBS NOT SHOWN TO BE REMOVED AND LOCATED BETWEEN THE CONSTRUCTION LIMITS AND THE RIGHT-OF-WAY LINE OR EASEMENT LINE SHALL BE SPARED UNLESS DIRECTED BY THE ENGINEER TO BE REMOVED. ALL TREES WITHIN THE APPROPRIATE CLEAR ZONE SHALL BE REMOVED.

	BY	DATE
REFERENCES NOTED	B. Shepardson	6/2020
REFERENCES CHECKED	E. Schrag	6/2020

PROJECT SURVEY CONTROL

Horiz. Proj. Datum: NAD83(2011) KRCS Zone 17 Wichita for project

Vert. Datum: NAVD88

Datum Bench Mark: The OPUS elevation at BASE was used for the project Datum. A double level run was performed through the benchmarks and traverse points for vertical control of the project.

UTILITY OWNERS

Water 1: City of Kechi
220 W Kechi Rd.
Kechi, KS 67067
Contact: Earl
(316) 744-9287 (Office)

Water 2: Sedgwick RWD #1
6226 N Oliver St.
Kechi, KS 67067
Contact: Brad
(316) 744-3173 (Office)

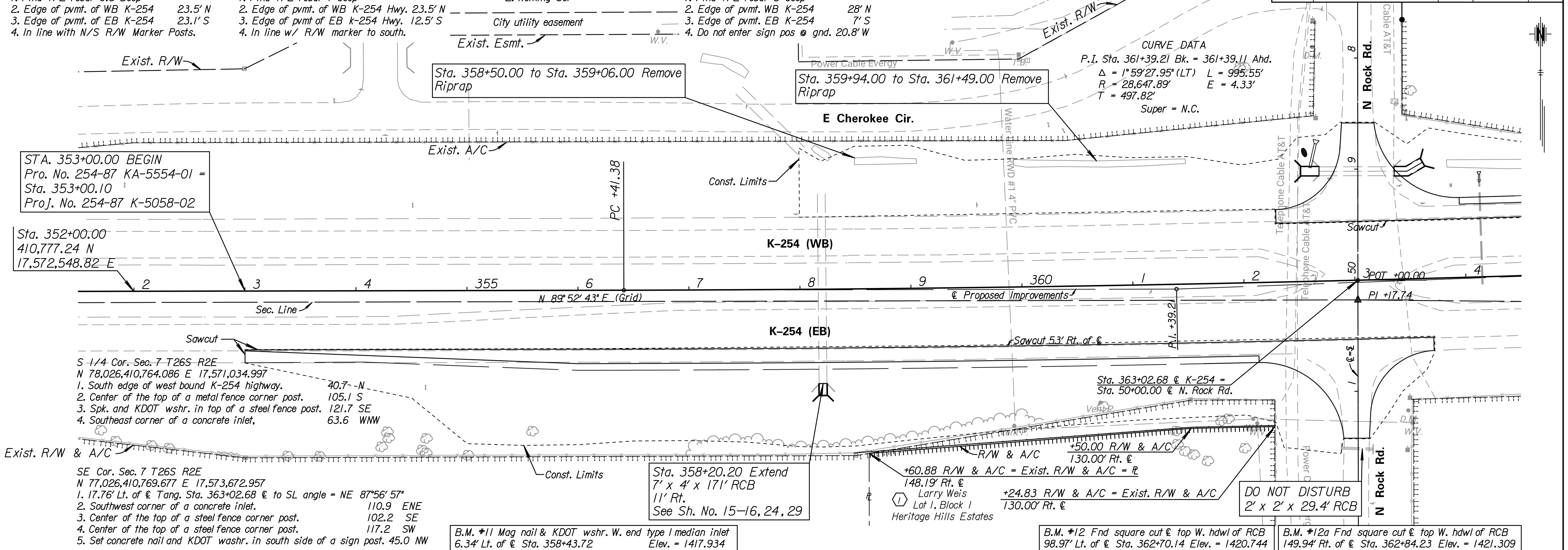
Gas: City of Kechi
220 W Kechi Rd.
Kechi, KS 67067
Contact: Earl
(314) 744-9287(Office)

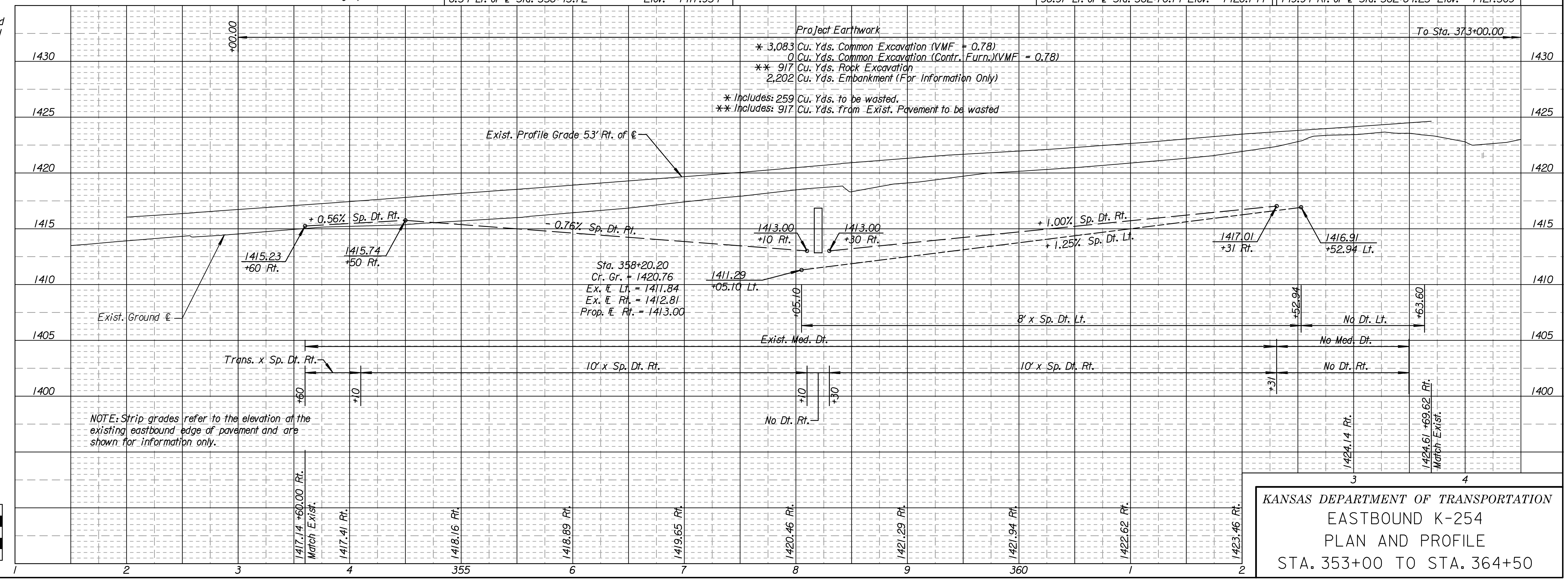
Electric: Evergy
1200 Main St.
Kansas City, MO 64105
Contact: Terry (USIC)
(785) 260-1908

Fiber Optics: AT&T
Contact: Terry (USIC)
(785) 260-1908

Cable TV: COX Communications
Contact: Terry (USIC)
(785) 260-1908

SCALE
PLAN: Lat. & Long. 50′ 0 50′ 100′
PROFILE: Horiz. same as above
Vert. 0 5′





KANSAS DEPARTMENT OF TRANSPORTATION
EASTBOUND K-254
PLAN AND PROFILE
STA. 353+00 TO STA. 364+50

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401rpp-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	8	83

DATE	BY	
6/2020	B. Shepardson	REFERENCES NOTED
6/2020	E. Schrag	REFERENCES CHECKED

E Cherokee Cir.

N Rock Rd.

Fiber Optic Cable AT&T

Telephone Cable AT&T

Telephone Cable AT&T

Power Cable Evergy

P.O.S.T. Sta. 366+31.56 = Proj. 254-87 K-5058-01 PC Sta. 366+31.59
N 410,797.591 E 17,574,001.659
1. Find 5/8" rebar w/ alum cap 1.5' deep
2. Edge of pvmt. of WB K-254 Hwy. 12.0' N
3. Edge of pvmt. of EB K-254 Hwy. 23.2' S
4. In line w/ N/S R/W marker post.

Sta. 364+14.49 Extend 15" x 86' CRP (RCP) 7' Lt. with End Section Lt. See Sh. No. 12 - 13, 29

P.T. Sta. 379+90.15
N 410,797.789 E 17,574,007.03
1. Nothing Found.
2. Nothing Set.

Sta. 363+86.00 to 365+14.00 Remove Riprap

Scott R. Bergkamp
W1/2 SW1/4
Sec. 8, T26S, R2E

P.C. Sta. 370+85.39
N 410,814.320 E 17,574,455.184
1. Find 1" rebar 7" deep.
2. Edge of pvmt. of WB K-254 Hwy. 20.5' N
3. Edge of pvmt. of EB K-254 Hwy. 23.4' S
4. S.E. Corner of Type III median inlet 19.5' NW

Sta. 370+67.23 Extend 15" x 78' CRP (RCP) 4' Lt. with End Section Lt. See Sh. No. 12-13, 29

Sta. 372+40.00 Install 4" Pipe Underdrain See Sh. No. 28 - 29

P.I. Sta. 375+37.79 (Bk.)
N 410,830.996 E 17,574,907.272
Δ = 2°26'36.85" (Rt.)
1. Not Set

STA. 373+00.00 END Pro. No. 254-87 KA-5554-01 = Sta. 373+00.10 Proj. No. 254-87 K-5058-02

P.T. Sta. 379+90.15
N 410,828.382 E 17,575,359.66
1. Found 5/8 rebar 0.1' deep.
2. Edge of pvmt. of WB K-254 Hwy. 23.0' N
3. Edge of pvmt of EB K-254 Hwy. 24.0' S
4. In Line of N/S R/W marker Posts

Sta. 374+00
410,823.585 N
17,574,847.799 E

P.I. +37.79

1" = 50'

PT +361.93

Exist. R/W & A/C

Const. Limits

Sawcut

Sawcut 53' Lt. of ℄

K-254 (WB)

Sta. 363+02.68 ℄ K-254 = Sta. 50+00.00 ℄ N. Rock Rd.

POT +00.00

PI +17.74

K-254 (EB)

℄ Proposed Improvements

N 87°53'15" E (Grid)

Sec. Line

Sawcut

PC 365.40

Exist. R/W & A/C

CURVE DATA
P.I. Sta. 375+37.79 Bk. = 375+37.65 Ahd.
Δ= 2°26'36.85" (RT) L= 904.63'
R= 21,211.46' E= 4.82'
T= 452.39'
Super = N.C.

UTILITY OWNERS

Water 1:	City of Kechi
Water 2:	Sedgwick RWD #1
Gas:	City of Kechi
Electric:	Evergy
Fiber Optics:	AT&T
Cable TV:	COX Communications

B.M. #13 Set mag nail & KDOT wshr W. end of Type I median inlet
8.07' Rt. of ℄ Sta. 364+12.96 Elev. = 1422.214

B.M. #14 Set mag nail & KDOT wshr. top Type III median inlet
16.74' Lt. of ℄ Sta. 370+66.96 Elev. = 1429.889

City of Bel Aire Land Bank
W1/2 NW1/4
Sec. 17, T26S, R2E

E 1/4 Cor Sec. 18 T26S R2E
N 18606408124.955 E 17573678.239
1. Three nails in the north side of a fence corner post. 42.9 E
2. Center at the top of a 3" steel pipe corner post. 51.5 WSW
3. Top of key of a fire hydrant 58.5 SW

E 1/4 Cor Sec. 7 T26S R2E
N 76,026,413,414.225 E. 17,573,670.113
1. 2626.81' Lt. of ℄ Tang. Sta. 363+02.68 ℄ to SL angle = NE87°56'57"
2. Nail and shiner in northeast side of a fence corner post 31.0W
3. Three nails in the west side of a 40" cir. hedge tree 28.1E
4. Spike in the south side of a 50" cir. hedge tree 41.5NE

S 1/4 Cor Sec. 8 T26S R2E
N 88,026,410,744.704 E 17,576,317.888
1. Found "+" cut in concrete base of fence post. 23.2 S
2. Spk. and KDOT wshr. in top of steel fence post. 53.6 ESE
3. Spk. and KDOT wshr. in top of steel fence post. 55.9 WSW
4. South edge of pavement east bound K-254 highway. 13.2 N

From Sta. 353+60.00

For Earthwork Quantities See Sh. No. 7

+40.00

Exist. Profile Grade 53' Lt. of ℄

Exist. Ground ℄

Sta. 370+66.76
Cr. Gr. = 1430.68
Ex. ℄ Lt. = 1426.96
Ex. ℄ Rt. = 1427.65
Prop. ℄ Lt. =1426.91

+ 2.35% Sp. Dt. Lt.

+ 2.88% Sp. Dt. Lt.

1421.19 +00 Lt.

1418.77 +15.85 Lt.

1417.54 +63.60 Lt.

Sta. 364+15.85
Cr. Gr. = 1424.72
Ex. ℄ Lt. = 1419.01
Ex. ℄ Rt. = 1421.79
Prop. ℄ Lt. =1418.77

+31 +52.94 +63.60 +00 +90 +40

No Dt. Lt. 10' x Sp. Dt. Lt. 10' x Std. Dt. Lt. Trans. x Std. Dt. Lt.

No Med. Dt. Exist. Med. Dt. Exist. Med. Dt.

No Dt. Rt. Exist. Dt. Lt. Exist. Dt. Lt.

1423.22 +30.13 Lt. Match Exist.
1423.65 Lt.
1424.33 Lt.
1425.14 Lt.
1426.02 Lt.
1426.99 Lt.
1427.98 Lt.
1428.92 Lt.
1429.84 Lt.
1430.79 Lt.
1431.84 Lt.
1432.18 +40.00 Lt. Match Exist.

NOTE: Strip grades refer to the elevation at the existing eastbound edge of pavement and are shown for information only.

KANSAS DEPARTMENT OF TRANSPORTATION
WESTBOUND K-254
PLAN AND PROFILE
STA. 352+30 TO STA. 363+00

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401rpp-02.dgn

CADconform Certify This File

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	9	83

REFERENCES	BY	DATE
REFERENCES NOTED	B. Shepardson	6/2020
REFERENCES CHECKED	E. Schrag	6/2020

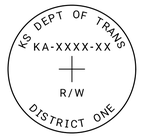
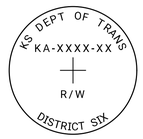
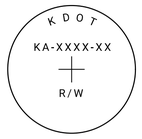
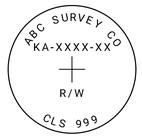
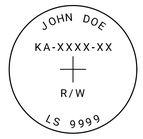
KANSAS DEPARTMENT OF TRANSPORTATION
ROCK ROAD
PLAN AND PROFILE
STA. 47+00 TO STA. 53+00

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401rpp-03.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	10	83

EXHIBIT

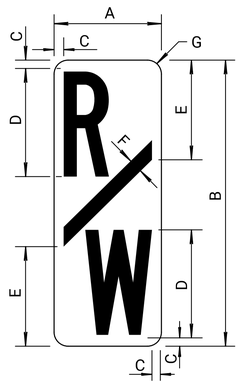
2" DIA. PRE-STAMPED ALUMINUM CAPS

		
KDOT - DISTRICT 1	KDOT - DISTRICT 2	KDOT - DISTRICT 3
		
KDOT - DISTRICT 4	KDOT - DISTRICT 5	KDOT - DISTRICT 6
		
KDOT STATE SURVEY CREW BUREAU OF RIGHT-OF-WAY	SURVEY COMPANY WITH A VALID CORPORATION LICENSE	INDEPENDENT SURVEYOR OR SOLE PROPRIETOR COMPANY

NOTES:

KA-XXXX-XX is the KDOT Project number
All stampings, forgings, and impressions shall be in accordance with the standard specifications and as shown on this drawing.

KI-107

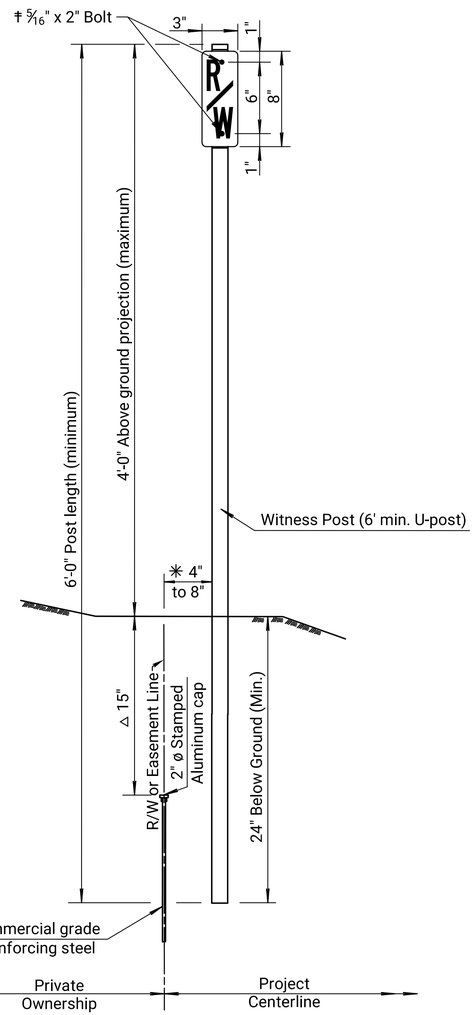


COLORS:

BACKGROUND - WHITE (REFLECTIVE)
LEGEND - BLACK (NON-REFLECTIVE)
LEGEND SERIES - 'B'

A	B	C	D	E	F	G
3"	8"	1/4"	3"	2 3/4"	3/8"	3/8"

R/W SIGN DETAIL



PLAN VIEW

NOTES

✳ 4" (Min.) to 8" (Max.) from rebar to witness post. (USE CAUTION, DO NOT DISTURB THE REBAR WHEN SETTING A POST). The witness post shall be set radial or perpendicular to the project centerline from the rebar. The "open face" of the U-post shall face the project centerline with the sign attached to the "open face". This exhibit is a side view, except for the sign, which is shown as turned for the purpose of illustrating content only. (See Sign Detail).

‡ Drill or punch holes. Attach 2 flat washers, 1 lock washer, and 1 nut per bolt.

△ Or as directed by the Engineer.

GENERAL NOTE

The post shall be U-shaped (6' minimum length) and factory painted the color of persian red (KDOT Orange) by an electronically powder-coated oven-baked process.

All installations shall have proper identification cap for the party installing it (See Exhibit). Monument(s) shall be set in accordance with the standard specifications and as shown on this drawing.

Removal and disposal of existing concrete R/W markers shall not be paid for directly but shall be Subsidiary to other items of the contract.

In an urban area, the witness post may be omitted as directed by the Engineer.

The R/W survey monuments shall be paid for under the bid item "Right-of-Way Survey Monuments (Each)" and be included in the plan quantities. ✡The table shown on this sheet is intended for additional monuments set in the field and will be filled out by the contracted survey company.

Mount R/W survey monument signs facing the road.

✡ Additional R/W Survey Monuments set by Contractor			
Station	Offset (Lt./Rt.)	Northing	Easting

✡ Additional R/W Survey Monuments set by Contractor			
Station	Offset (Lt./Rt.)	Northing	Easting

NO.	DATE	REVISIONS	BY	APP'D
4	1-6-16	Revised Notes	T.T.R.	S.W.K.
3	5-24-13	Revised General Note	S.W.K.	J.O.B.
2	2-7-07	Removed dual cap note	S.W.K.	J.O.B.
1	6-2-04	Revised caps and notes.	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

R/W SURVEY MONUMENT INSTALLATION DETAIL SHEET

RD995

FHWA APPROVAL	3-16-16	APP'D.	SCOTT W. KING
DESIGNED	DETAILED KAHLE	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK. RHOADS	QUAN.CK.	TRACE CK.

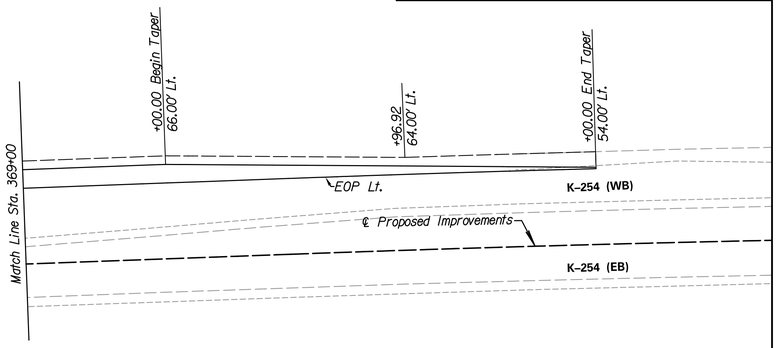
KDOT Graphics Certified 02-18-2021

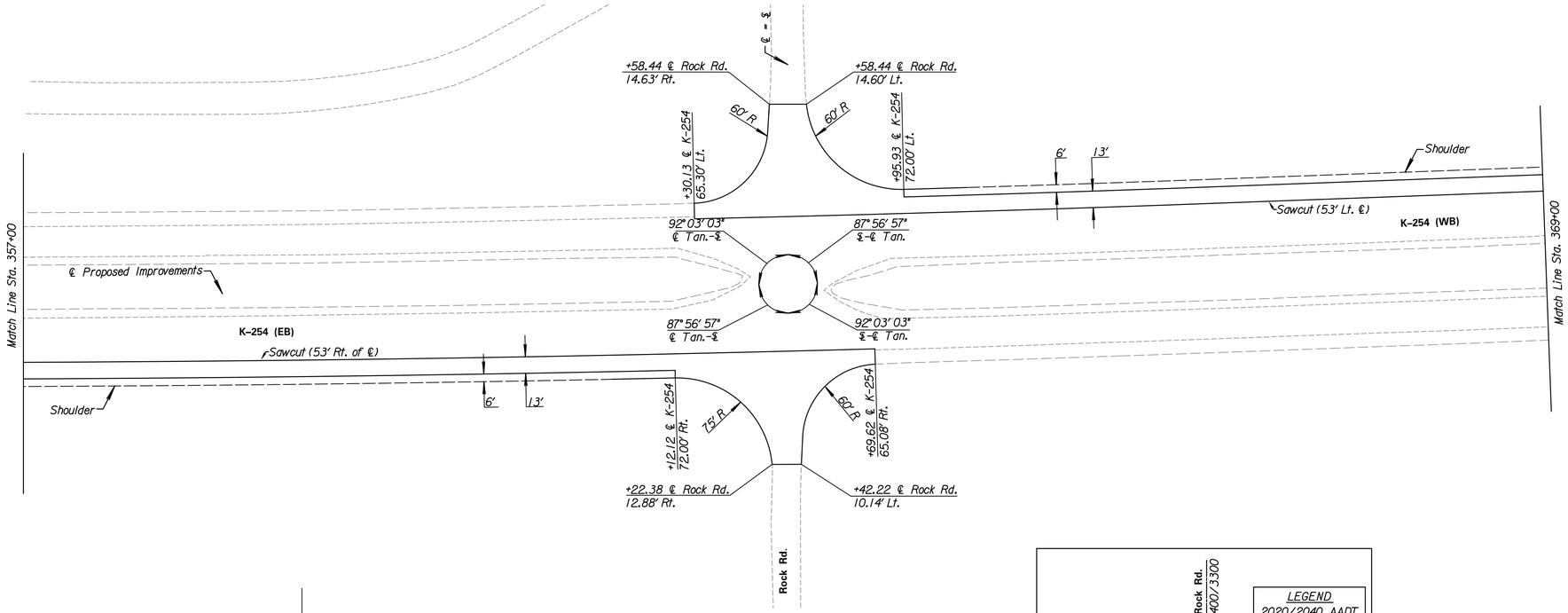
KDOT Graphics Certified

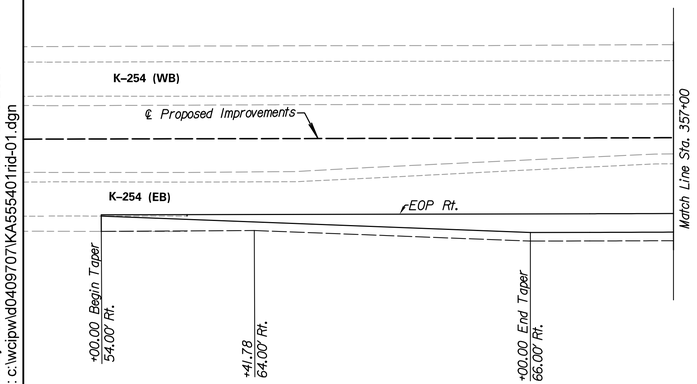
Drawn By : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA555401rss995-01.dgn

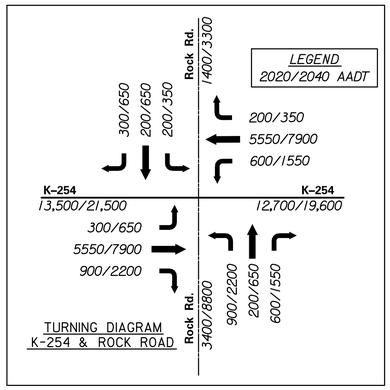
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	11	83

DATE	BY	
		REFERENCES NOTED
		REFERENCES CHECKED









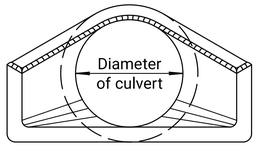
KANSAS DEPARTMENT OF TRANSPORTATION

INTERSECTION DETAIL

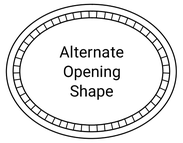
K-254 & ROCK RD.

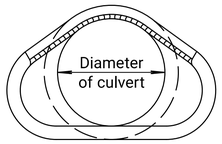
Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401nd-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	12	83



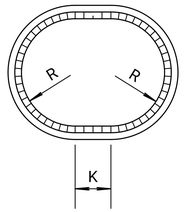
END ELEVATION (TYPE I)



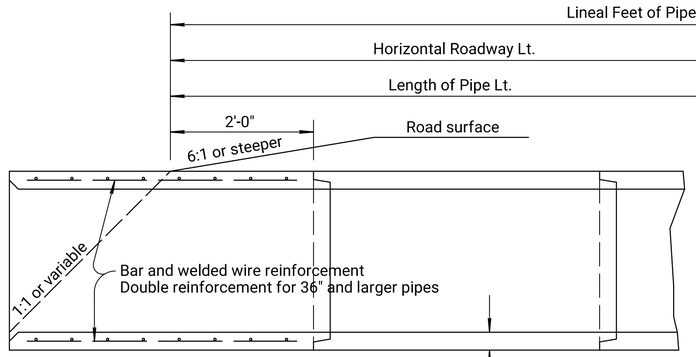


SECTION A-A

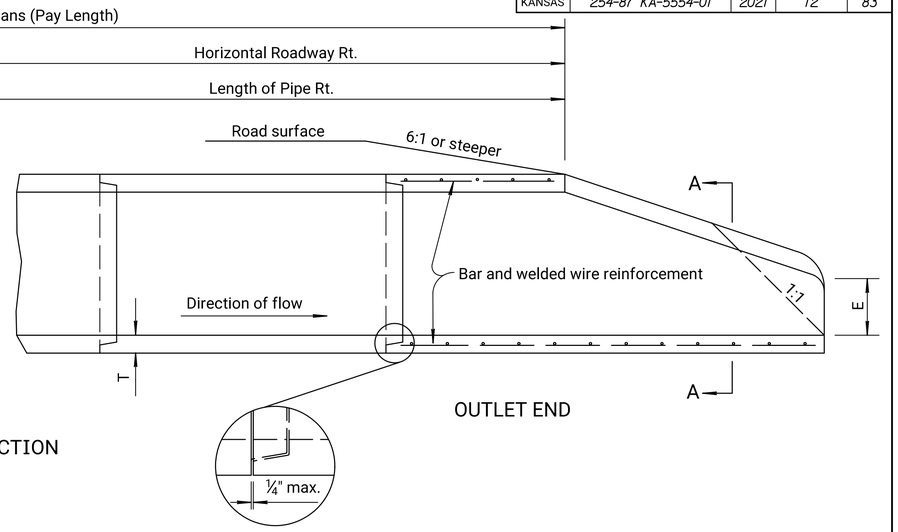
Showing rounding of inside edge of end section.



END ELEVATION
(TYPE III)



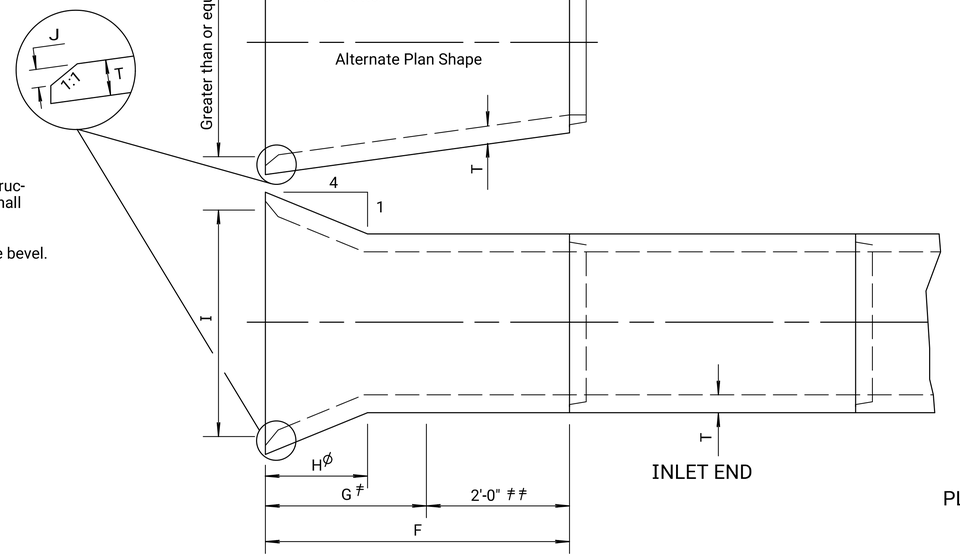
INLET END



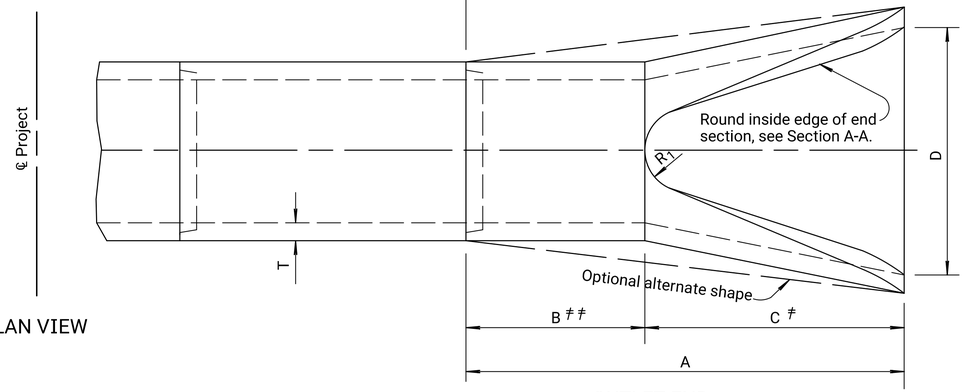
OUTLET END

ELEVATION SECTION

Note: There shall be no payment for gain in length due to joint fit tolerance.



INLET END



PLAN VIEW

OUTLET END

∅ Transition to round pipe.
≠ Paid for as separate item of End Section, except when structures shall bid as alternates. In that case End Sections shall be subsidiary to bid item. "Drainage Structure No. ".
≠≠ Included in pay length of pipe.
⚹ Minimum waterway area is calculated at the inside of the bevel.

END SECTION (TYPE I) NOMINAL DIMENSIONS

Diam.	A	B≠≠	C≠	D	E	R_I	Slope	T
12"	6'-0 ⅞"	4'-0 ⅞"	2'-0"	2'-0"	4"	9	3:1	2"
15"	6'-1"	3'-10"	2'-3"	2'-6"	6"	11	3:1	2 ¼"
18"	6'-1"	3'-10"	2'-3"	3'-0"	9"	12	3:1	2 ½"
24"	6'-1 ½"	2'-6"	3'-7 ½"	4'-0"	9 ½"	14	3:1	3"
30"	6'-1 ¾"	1'-7 ¾"	4'-6"	5'-0"	1'-0"	15	3:1	3 ½"
36"	8'-1 ¾"	2'-10¾"	5'-3"	6'-0"	1'-3"	20	3:1	4"
42"	8'-2"	2'-11"	5'-3"	6'-6"	1'-9"	22	3:1	4 ½"
48"	8'-2"	2'-2"	6'-0"	7'-0"	2'-0"	22	3:1	5"
54"	8'-2 ¼"	2'-9 ¼"	5'-5"	7'-6"	2'-3"	24	2.4:1	5 ½"
60"	8'-3"	3'-3"	5'-0"	8'-0"	2'-11"	24	21	6"
72"	8'-3"	1'-9"	6'-6"	9'-0"	3'-0"	24	1.86:1	7"
84"	9'-3 ½"	1'-9"	7'-6 ½"	10-0"	3'-0"	24	1.6:1	8"

SIDE TAPERED INLET SECTION (TYPE III)-NOMINAL DIMENSIONS

Diam.	Min. W.W.⚹ Area Sq. Ft.	F	G	H	I	J	K	R	T
24"	4.5	4'-3"	2'-3"	1'-5 ⅛"	2'-8"	1 ½"	8"	1'-0"	3"
30"	7.0	4'-9 ½"	2'-9 ½"	1'-9 ½"	3'-4"	2"	10"	1'-3"	3 ½"
36"	10.1	5'-4"	3'-4"	2'-1 ½"	4'-0"	2"	1'-0"	1'-6"	4"
42"	13.7	5'-10 ½"	3'-10 ½"	2'-5 ⅛"	4'-8"	2 ½"	1'-2"	1'-9"	4 ½"
48"	17.9	6'-5"	4'-5"	2'-10 ⅛"	5'-4"	3"	1'-4"	2'-0"	5"
54"	22.7	6'-11 ½"	4'-11 ½"	3'-2 ½"	6'-0"	3 ½"	1'-6"	2'-3"	5 ½"
60"	28.0	7'-6"	5'-6"	3'-6 ⅞"	6'-8"	4"	1'-8"	2'-6"	6"
72"	40.3	8'-7"	6'-7"	4'-3 ⅝"	8'-0"	5"	2'-0"	3'-0"	7"
84"	54.8	9'-8"	7'-8"	5'-0 ⅜"	9'-4"	6"	2'-4"	3'-6"	8"

Dimensions for alternate shapes shall be equal to or greater than those shown in the table, unless otherwise shown.

Note to Designer: KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the Standard Specifications. Refer to the KDOT Design Manual, Volume I (Part C), Road Section, "Elements of Drainage & Culvert Design" for structural pipe design information which includes: corrugations, sizes, gauges, maximum/minimum fill heights and classes of pipe.

NO.	DATE	REVISIONS	BY	APP'D
2	4-18-08	Added ref. to KDOT Pipe Policy	S.W.K	J.O.B
1	4-05-05	Revised reinforcement callout	S.W.K	J.O.B

KANSAS DEPARTMENT OF TRANSPORTATION

CONCRETE END SECTIONS FOR CONCRETE PIPES TYPE I & SIDE TAPERED INLET SECTION (TYPE III)

RD662

FHWA APPROVAL 6-27-08		APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

KDOT Graphics Certified 05-24-2021

KDOT Graphics Certified

Drawn By : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA555401rss662-01.dgn

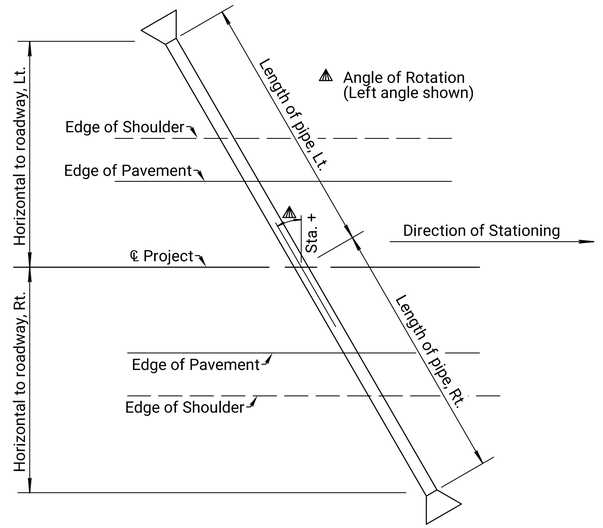
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	13	83

PIPE CULVERT SUMMARY

Station	Type	Size or Bid Designation Sq. Ft.	Flow Line Lt.	Flow Line Rt.	Horizontal Roadway Lt.	Horizontal Roadway Rt.	Degree of Rotation	Length of Pipe Lt.	Length of Pipe Rt.	Lin. Ft. of Pipe	Height of Fill (max.) Ft.	Concrete Pipe AASHTO Class No.	Pipe Gauge ◔ Steel	Pipe Gauge ◔ Alum.	Pipe Corrugations ◔ Steel	Pipe Corrugations ◔ Alum.	Remarks
K-254 Mainline																	
364+14.49	CRP (RCP)	15"	1,418.95	1,419.01	94.5	8.2		7		7	2.0	II					Extension Lt.
370+67.23	CRP (RCP)	15"	1,426.91	1,426.96	83.5			4		4	3.2	II					Extension Lt.
Rock Rd.																	
48+77.36	SS (RCP)	24"	1,417.66	1,418.95				22		22	3.0	II					Connect to RCB Ext. Rt. Sta. 49+00.00

◔ Unless otherwise noted, minimum pipe gauge & corrugations to be as shown in RD660.
See Summary of Quantities for End Section information.

✳ Only include floor elevations for embedded pipes. See RD668 for details. For structures not embedded, the floor elevations may be omitted.



PLAN
(Showing Rotation about ℄)

Type	ALLOWABLE LOCATION ⚠ Mainline	Side Road	Entrance	Storm Sewer Under ML	Storm Sewer Not Under ML
✡PVCP					
⊟ PEP					
CSP					
ACSP					
CAP					
RCP	X	X	X		

✡ When inside diameter of pipe is 36" or less.

⚠ Unless otherwise specified in the plans. Some pipe types may not be allowed at a location if the fill height exceeds the maximum allowable or is less than the minimum allowable cover.

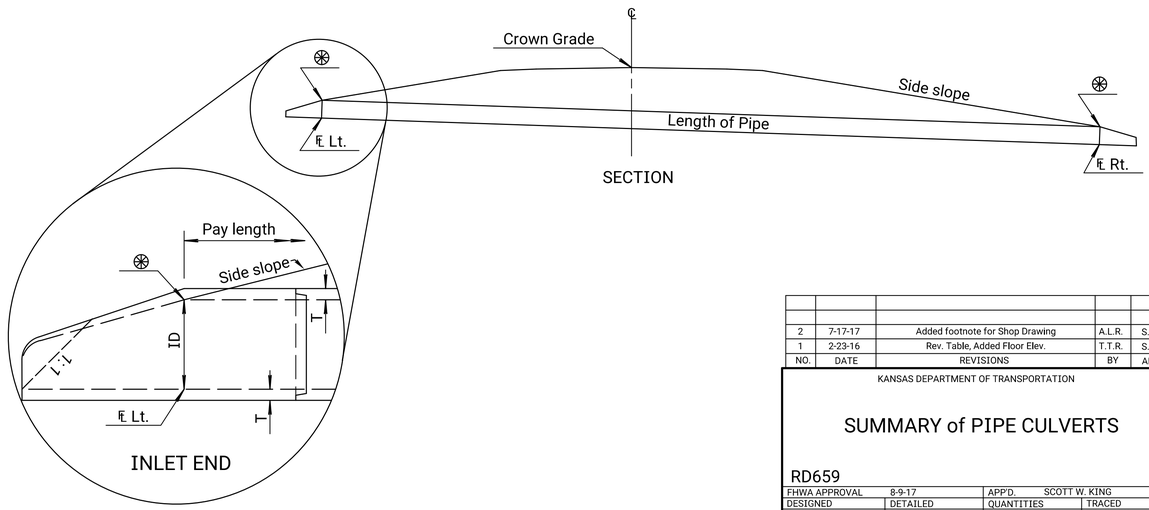
⊟ When inside diameter of pipe is 60" or less.

Type	ALLOWABLE END SECTIONS ◈ CS	◈ ACS	CA	ᛘ RC
PVCP				
PEP				
RCP				X
ACSP CAP CSP	Provide End Sections of the same material and coating type as the pipe.			

◈ Type IV End Sections are only made of CS or ACS.

ᛘ Submit Shop Drawing of connection for review

⊛ Design side slope to intersect inside diameter of pipe outside of Clear Zone.



NO.	DATE	REVISIONS	BY	APP'D
2	7-17-17	Added footnote for Shop Drawing	A.L.R.	S.W.K.
1	2-23-16	Rev. Table, Added Floor Elev.	T.T.R.	S.W.K.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY of PIPE CULVERTS

RD659

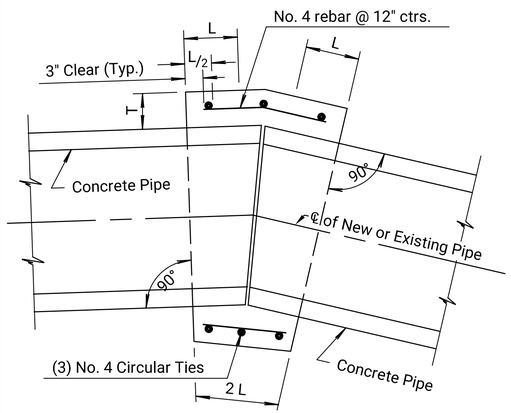
FHWA APPROVAL	8-9-17	APP'D. SCOTT W. KING	
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 09-27-2021

Note to Designer: KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the Standard Specifications. Refer to the KDOT Design Manual, Volume I (Part C), Road Section. "Elements of Drainage & Culvert Design" for structural pipe design information which includes: corrugations, sizes, gauges, maximum/minimum fill heights and classes of pipe.

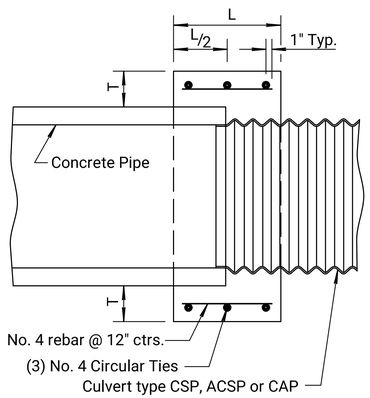
Drawn By : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA5554O1rss659-01.dgn

KDOT Graphics Certified



PIPE COLLAR AT CHANGE IN ALIGNMENT

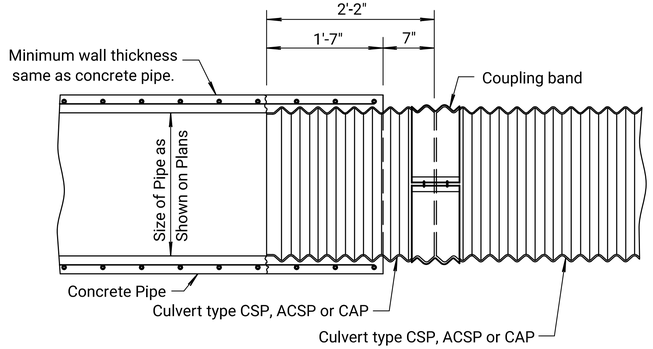
TYPE A COLLAR



PIPE COLLAR AT CHANGE IN PIPE MATERIAL

TYPE B COLLAR

CONCRETE PIPE COLLAR		
Pipe Dia.	L	T
18"	1'-0"	6"
24"	1'-0"	6"
36"	1'-6"	8"
48"	1'-6"	10"
60"	1'-9"	11"



(CONCRETE PIPE CONNECTED TO CORRUGATED METAL PIPE)

TYPE C COLLAR ⚠

⚠ A section of concrete pipe (6'-0" min.) is cast 1'-7" short with the re-steel protruding. Tack weld the re-steel to the 2'-2" section of CMP and finish casting the remaining 1'-7" of RCP around the CMP. This is an approved connection provided it is fabricated as an integral part of a section of concrete pipe.

General Notes:

Pipe collar shall be used to join pipes of different diameters or materials or where change in alignment or grade exceeds that allowed for ordinary joints.

All concrete shall be Concrete Grade 3.0. All reinforcing steel shall be Grade 60 and shall have a minimum of 2" of cover.

The diameter of the circular ties shall be the outside diameter of the larger pipe plus "T".

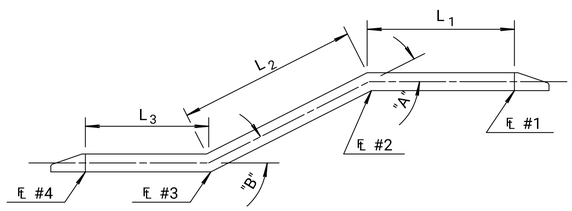
The maximum allowable distance between the ends of the pipes at any point is 2".

All labor, materials and incidentals required to construct the pipe collar Type A, B or C shall not be paid for directly but shall be subsidiary to the individual pipe bid items.

Aluminum or aluminized pipes or end sections shall be coated with an asphaltic paint when in contact with fresh concrete in accordance with the Standard Specifications.

Pipe ends shall be trimmed such that the maximum distance between pipes at any point is 2".

PIPE COLLARS



Sketch Along ℄ CRP (CMP)

Broken-Back

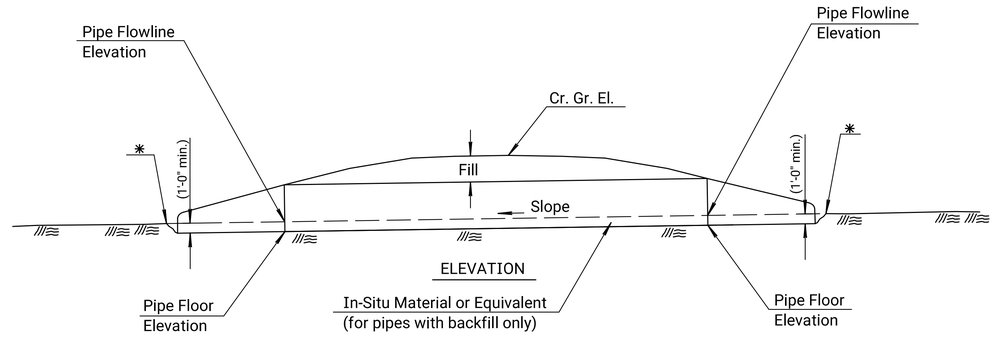
SUMMARY OF BROKEN BACK PIPES											
STATION	SIZE	FLOW LINES				LENGTH			ANGLES		REMARKS
		#1	#2	#3	#4	L_1	L_2	L_3	A	B	

GENERAL NOTE

For pipes where the height or rise is greater than 4'-0" place uncompacted backfill through the pipe, including the end sections, 1'-0" (Min.). Backfill material will be reasonably free of organic material. In-situ material may be used for backfill as approved by the Engineer.

For pipes where the height or rise is less than or equal to 4'-0" install the pipe such that embedment will occur through natural sedimentation. See Pipe Embedment detail shown on this sheet.

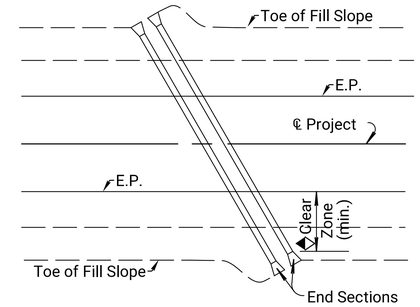
Work and material for embedding pipes will not be paid for directly, but will be Subsidiary to the other pipe bid items in the contract.



PIPE EMBEDMENT

✳Natural channel or ditch flowline elevation. See profile sheets and cross sections for details.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	14	83

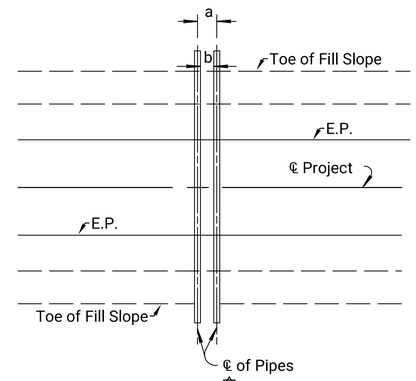


PLACEMENT OF ROTATED PIPES

RELATIVE TO FILL SLOPE

AND CLEAR ZONE

♦ Pipe culverts 2'-0" or less in height may terminate within the clear zone with Type I or Type III End Section. Any size pipe may terminate within the clear zone with a Type IV End Section.



a = Face width of end section ✡ + 1'.

✡ Face width is equal to the following dimension shown on the end section std. drawing.

Type I Concrete = D

Type III Concrete = I

Type I CM = W+ 2A

Type III CM = G

Type IV = W+ 2A

b = Pipe diameter or span (3' min.)

Spacing shall be equal to the larger of dimensions a or b.

Spacing for three or more pipes shall be determined using a similar method.

MULTIPLE PIPE SPACING

NO.	DATE	REVISIONS	BY	APP'D
6	1-21-16	Added Details, Pipe Embedment	T.T.R.	S.W.K.
5	5-17-13	Rev. Dimension, Type B Collar	S.W.K.	J.O.B.
4	4-18-08	Added asphaltic paint note	S.W.K.	J.O.B.
3	1-28-05	Changed Class to Grade concrete	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS
PIPE CULVERT DETAILS

RD668

FHWA APPROVAL	3-16-16	APP'D. SCOTT W. KING	
DESIGNED	DETAILED KAHLE	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK. RHOADS	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 11-02-2020

KDOT Graphics Certified

Drawn By : SJHorvatic Plotted :12/10/2021

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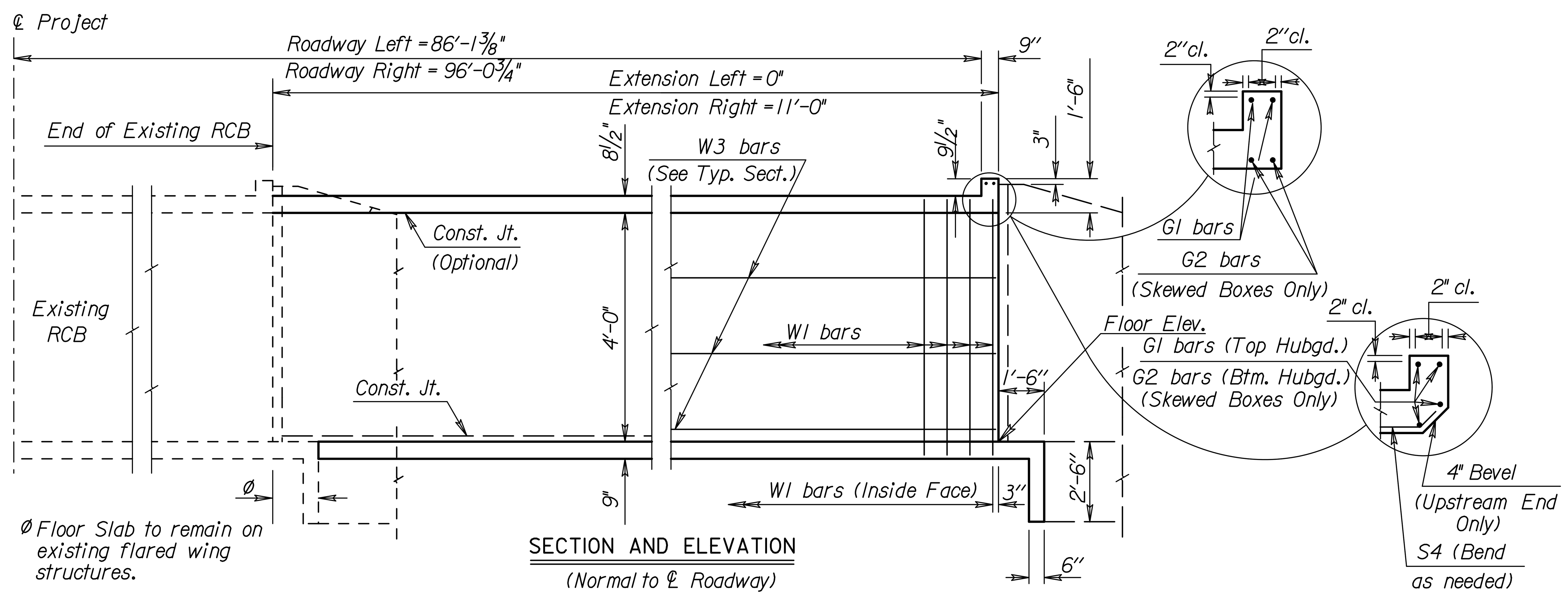
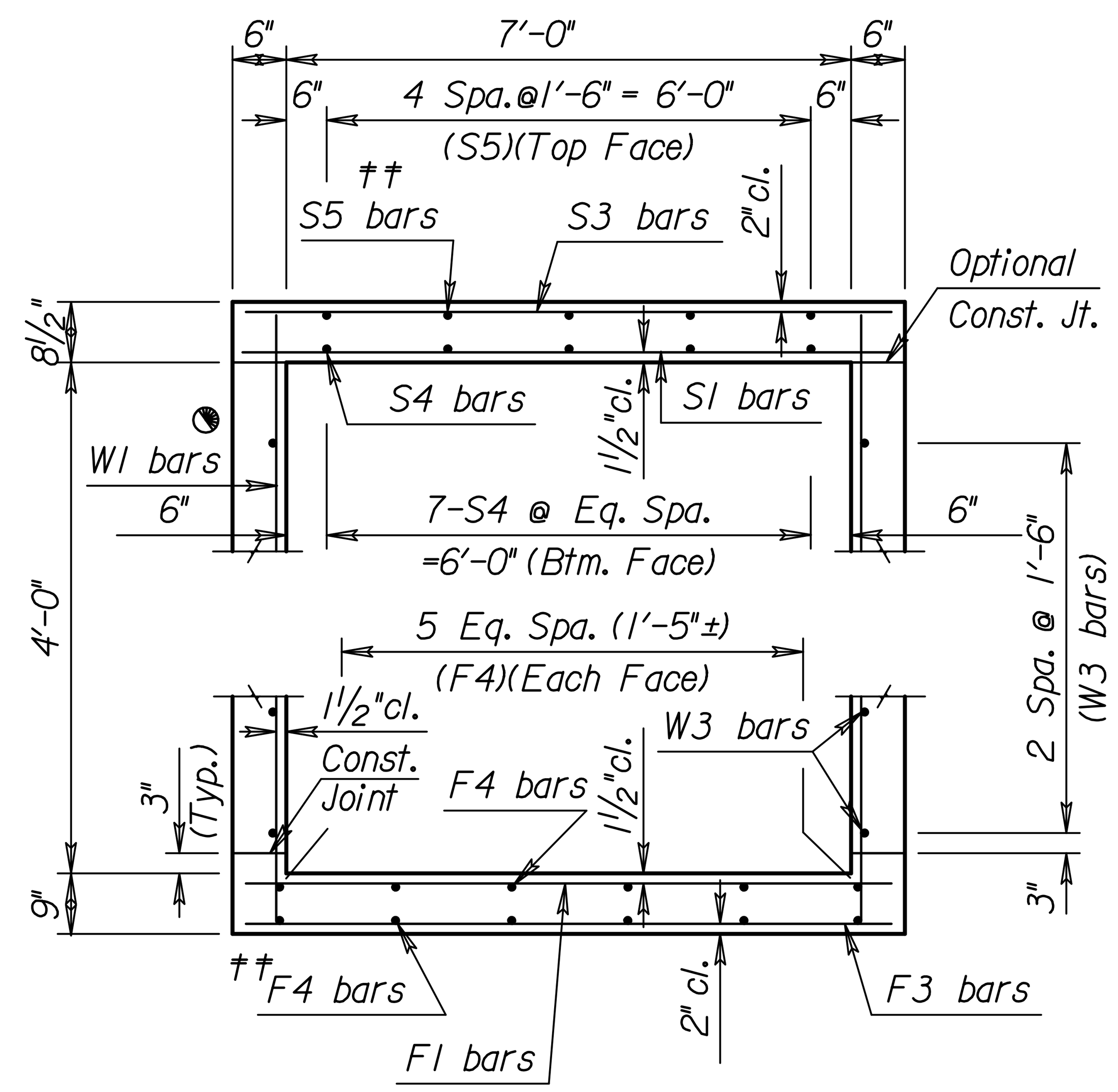
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	15	83



SECTION AND ELEVATION

(Normal to ℄ Roadway)



TYPICAL SECTION

◔ See RCB Auxiliary Details for Optional Splice.

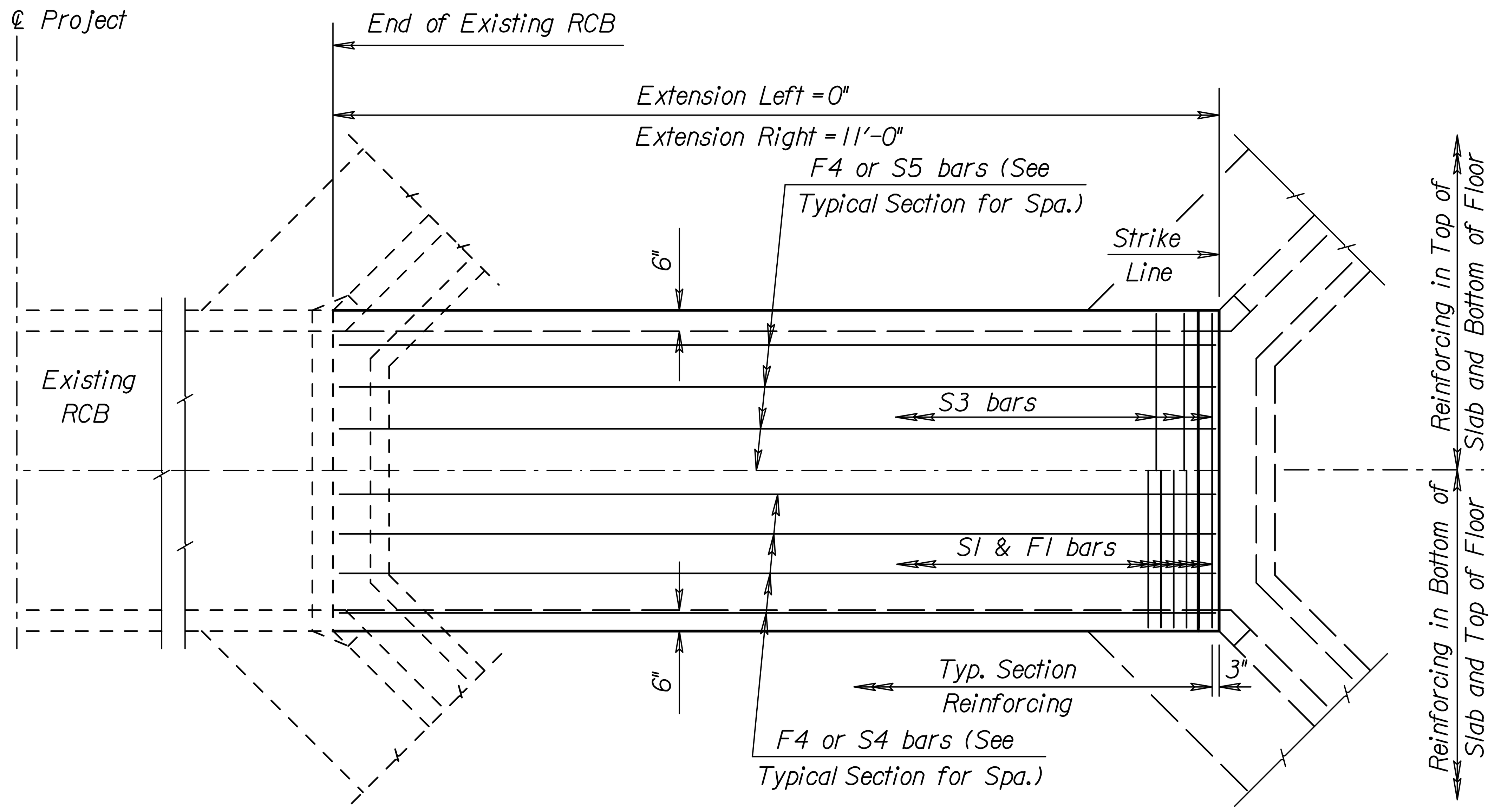
Note:
S3 bars omitted unless grade box or slab thickness is greater than or equal to 12".

Note:
F3 bars omitted unless floor thickness is greater than or equal to 12.".

†† Omit S5 bars when S3 bars are omitted and omit the bottom layer of F4 bars when F3 bars are omitted.

See Standard No. RD 080 for additional details.

Note: Use only cast-in-place construction at this location.



PLAN

GENERAL NOTES

DESIGN SPECIFICATION: AASHTO LRFD Spec., 2007 Ed., 2009 Int.
DESIGN LOADING: HL93
UNIT STRESSES: Grade 4.0 Concrete f'c = 4,000 p.s.i.
Reinforcing Steel fy = 60,000 p.s.i.

FILL HEIGHT: Unless otherwise noted, the Design Fill Height is measured from the riding surface at the culvert and includes the surfacing.

CONCRETE: Use concrete conforming to Grade 4.0 Concrete. Bevel all exposed edges with a ¾" triangular molding. Where Grade 4.0(AE) is specified, place this concrete in the top slab above the Construction Joint.

REINFORCING: Use reinforcing steel conforming to ASTM A615, Grade 60. All dimensions relative to reinforcing steel are to the centerline of the bar unless otherwise noted.

EXCAVATION: Excavation for culverts less than bridge length shall not be paid for directly but shall be subsidiary to Grade 4.0 Concrete. Excavation for RCB bridges shall be paid for as Class III Excavation.

SEAL COURSE: The Engineer may require a seal course. The seal course shall be unreinforced Concrete(Commercial Grade) with a minimum depth of 3 inches or as determined by the Engineer. Concrete for the seal course shall be paid for at the unit price set for Concrete for Seal Course.

FOUNDATION STABILIZATION: The Foundation Stabilization quantity has been calculated to the limits shown on the "RCB Auxiliary Details" sheet. The depth may be increased by the Engineer. The Contractor may underrun Foundation Stabilization under the barrel if founded on firm material and with the Engineer's approval. Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.

QUANTITIES: The quantities shown in the Culvert Summary include apron and/or soil saver quantities when they are required by the plans. Payment for additional quantities that result from including a seal course and/or a floating apron, as a change in the original plans, shall be made at the unit price bid for the various items involved.

GRANULAR BACKFILL (WINGWALLS): See the "Auxiliary Details" sheet.

STRIKE LINE: Construct the wingwalls and that portion of the RCB outside the Strike Line level. Construct the wingwall footings with the culvert floor. See the wingwall detail sheets.

BRIDGE BACKWALL PROTECTION SYSTEM: For structures with this bid item in the Summary of Quantities. See the "Auxiliary Details" sheet.

⧖ For design purposes ONLY. Do NOT use for Construction

CULVERT SUMMARY

⊕ includes any welded wire fabric

	Floor Elev.	Crown Gr. Elev.	⧖Design Fill Ht.	Skew	Wings	Scour Apron	Soil Saver	Concrete Barrel (Cu.Yds.)	Concrete Wings (Cu.Yds.)	Concrete Total (Cu.Yds.)	Reinf. Steel (Gr. 60) Barrel (Lbs.)	Reinf. Steel (Gr. 60) ⊕Wings (Lbs.)	Reinf. Steel (Gr. 60) Total (Lbs.)	LRFR RATING FACTORS HL-93 Loading Inventory	LRFR RATING FACTORS HL-93 Loading Operating
Ext.Lt.	0.00	1420.64	2	0	None	No	No	0.00	0.00	0.00	0	0	0	1.12	1.45
Ext.Rt.	1412.87				Flared			6.23	4.63	10.85	759	575	1334		

△ Epoxy Coated Bars

BAR SCHEDULE

	△F1 Size	Spa.	No.	Length	Size	Spa.	No.	Length	△F3 Size	Spa.	No.	Length	△F4 Size	No.	Length	△S1 Size	Spa.	No.	Length	Size	Spa.	No.	Length	△S3 Size	Spa.	No.	Length	△S4 Size	No.	Length	△S5 Size	No.	Length
Ext.Lt.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ext.Rt.	6	6½"	20	7'-8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7'-8"	4	6	9'-2"	6	6½"	22	7'-8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7'-8"	5	7	10'-8"	4	N/A	10'-8"

	△K1 Size	Spa.	No.	Length	△K2 Size	Spa.	No.	Length	△W1 Size	Spa.	No.	Length	△ Size	Spa.	No.	Length	△W3 Size	No.	Length	△ Size	Spa.	No.	Length	△G1 Size	No.	Length	△G2 Size	No.	Length	Size	Spa.	No.	Length
Ext.Lt.	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Ext.Rt.	N/A	N/A	N/A		N/A	N/A	N/A		4	9"	30	5'-1"	N/A	N/A	N/A	N/A	4	6	10'-8"	N/A	N/A	N/A	N/A	5	2	7'-8"	N/A	N/A	N/A				

Minimum Splice Lengths	
#4	1'-5"
#5	1'-9"

SUMMARY OF QUANTITIES		
Concrete (Grade 4.0)	10.9	C.Y.
Concrete (Grade 4.0)(AE)		C.Y.
Bridge Backwall Protection System	11	S.Y.
Reinforcing Steel (Gr. 60)	1340	Lbs.
Reinforcing Steel (Gr. 60)(Epoxy Coated)		Lbs.
Class III Excavation		C.Y.
Foundation Stabilization	4	C.Y.
Concrete for Seal Course (Set)	1	C.Y.
Granular Backfill (Wingwalls)	12	C.Y.

NO.	DATE	REVISIONS	BY	APP'D
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Sta. 358+20.20

SINGLE 7 ft x 4 ft RCB
11.0 ft EXT. RT.

BR 1.7.4 P — Sedgwick Co.

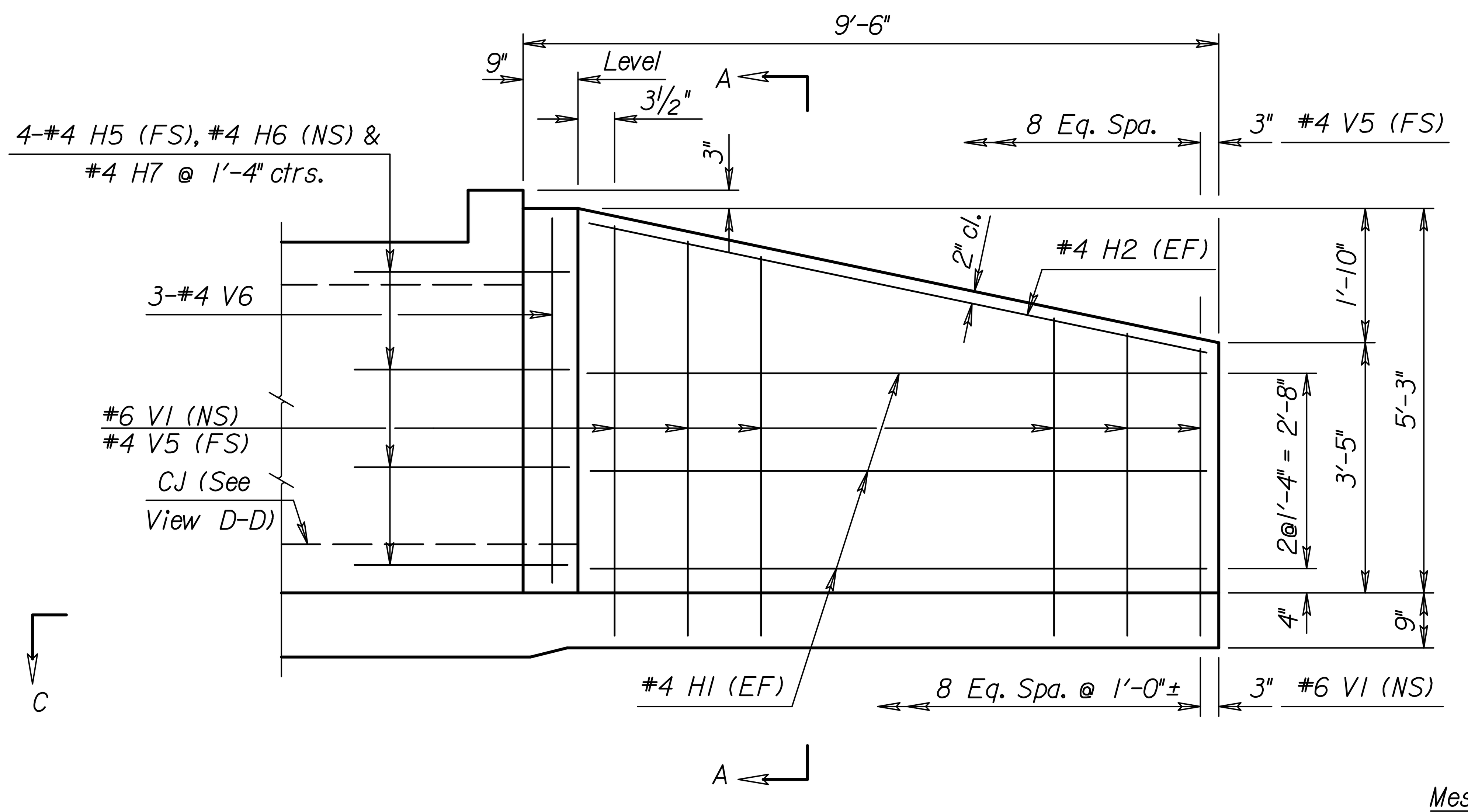
FHWA APPROVAL	10-20-10	APP'D	Terry L. Fleck
DESIGNED	DETAILED	QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.

SYSTEM PART	VERSION/ID
CADD VBA	12/15/2010
DATABASE	5/4/2020
RCB PROGRAM	7.1.21
KBOX MODEL ID	1372
CELL LIBRARY	5/4/2020
06	

Plotted By: SJHorvatic — Plot Location:
File: c:\wcipw\d0409707\KA555401rcb-01.dgn
Plot Date: 12/10/2021

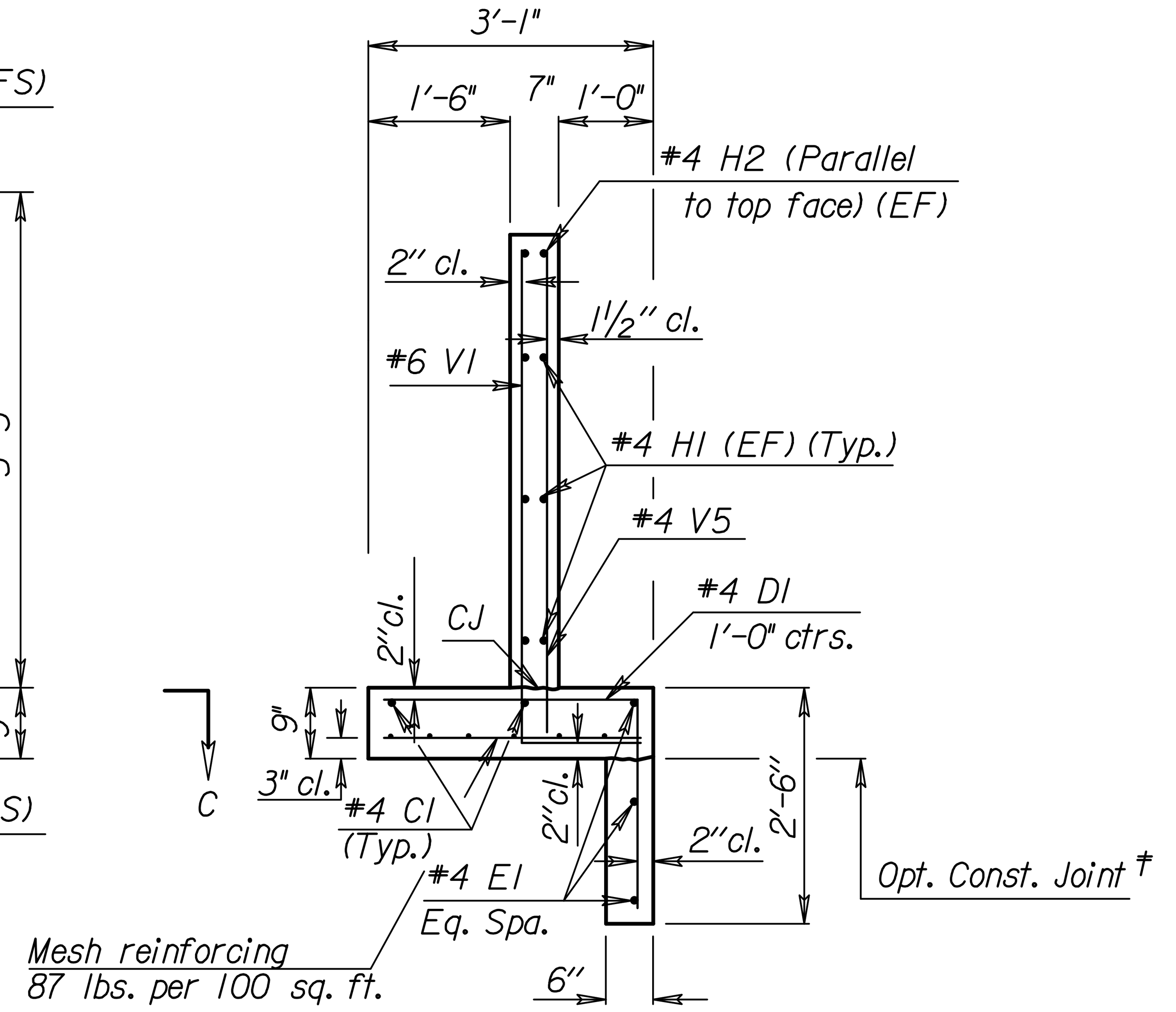
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	16	83

⊕ Typical both wings



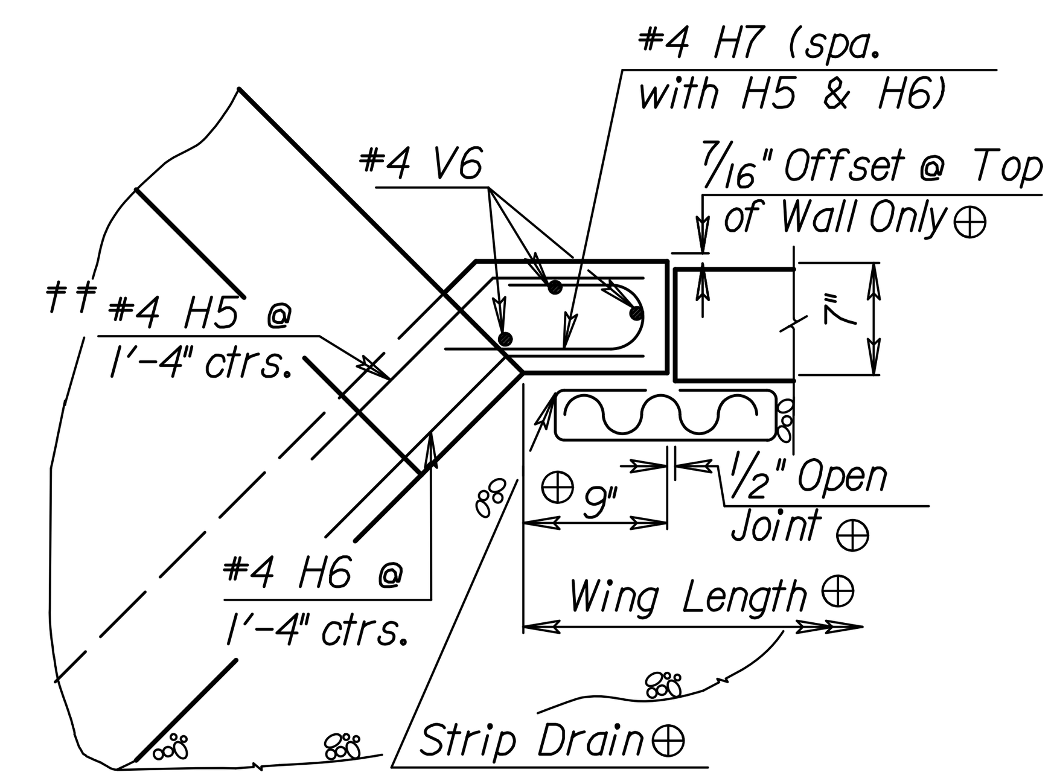
ELEVATION OF WINGWALL

(Backface Shown)



SECTION A-A

See "RCB Aux. Details" sheet for additional requirements.



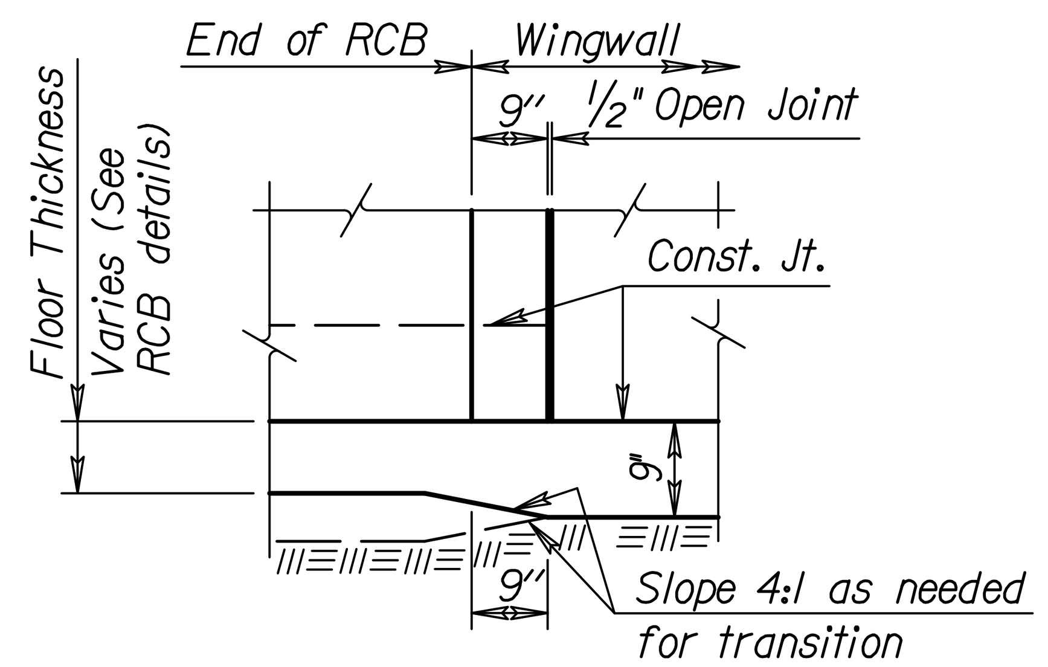
WINGWALL JOINT DETAIL

(Plan View)

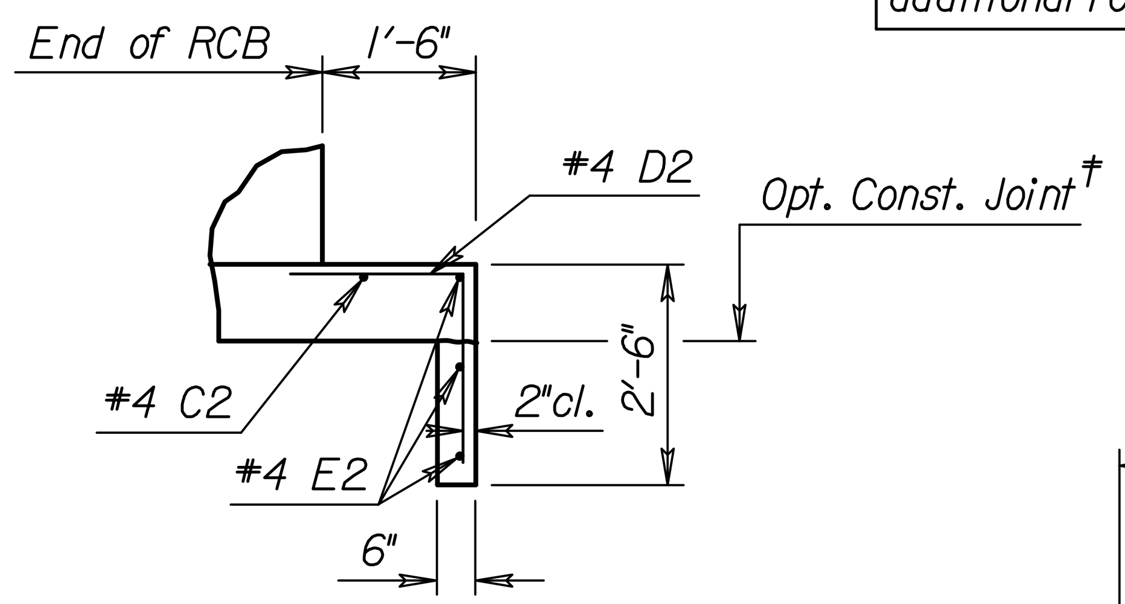
† NOTE: Const. Jt. may be used at Contractor's option when approved by the Engineer. D1 bars or mesh may be spliced thus: Minimum overlap shall be 1'-3". No increase in quantities or cost shall be allowed when Contractor elects this option.

GENERAL NOTES

DESIGN SPECIFICATION: AASHTO LRFD Spec., 2007 Ed., 2009 Int.
DESIGN LOADING: HL93
UNIT STRESSES: Grade 4.0 Concrete; f'c = 4,000 p.s.i.
Reinforcing Steel; fy = 60,000 p.s.i.
CONCRETE: Grade 4.0 Concrete shall be used throughout. Bevel all exposed edges with a ¾" triangular moulding.
REINFORCING: All reinforcing shall conform to ASTM A615, Grade 60. Welded Wire Fabric shall conform to ASTM A185. All dimensions relative to reinforcing steel shall be to centerline of bar unless otherwise noted. Wire Reinforcing mesh shall be electrically welded and shall be composed of 6 x 6- W6 x W6 welded wire fabric and shall be classified as pounds of reinforcing and included in the total quantity for the bid item Reinforcing Steel (Gr. 60)
QUANTITIES: Wingwall Quantities include all quantities outside the neat lines of the box, excluding the hubguard.
APRON: A 5" concrete slab shall be constructed between the downstream wings in locations subject to scour only when specified on the plans or by the Engineer.
BACKFILL MATERIAL: Use Granular Backfill material meeting the requirements of SB-1, SB-2, SCA-1, SCA-2.
Backfill all wings to limits shown on the "RCB Auxiliary Sheet".
FILTER FABRIC: Separate in-situ material from granular backfill with approved filter fabric complying with Section 1710.
Filter Fabric is subsidiary to "Granular Backfill".
FOUNDATION STABILIZATION: Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.

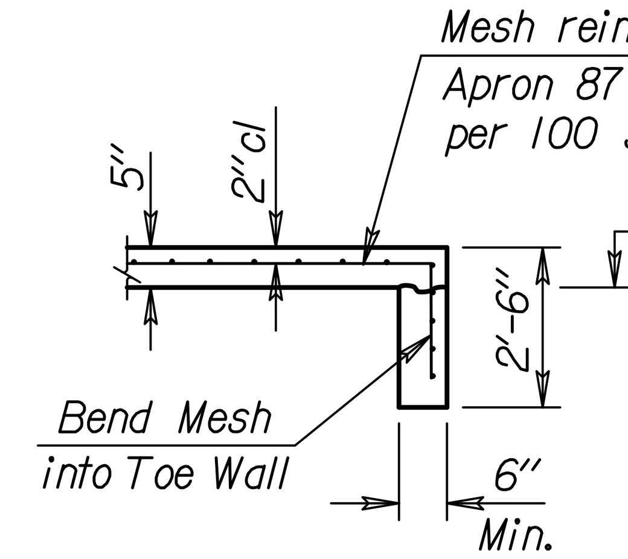


VIEW D-D

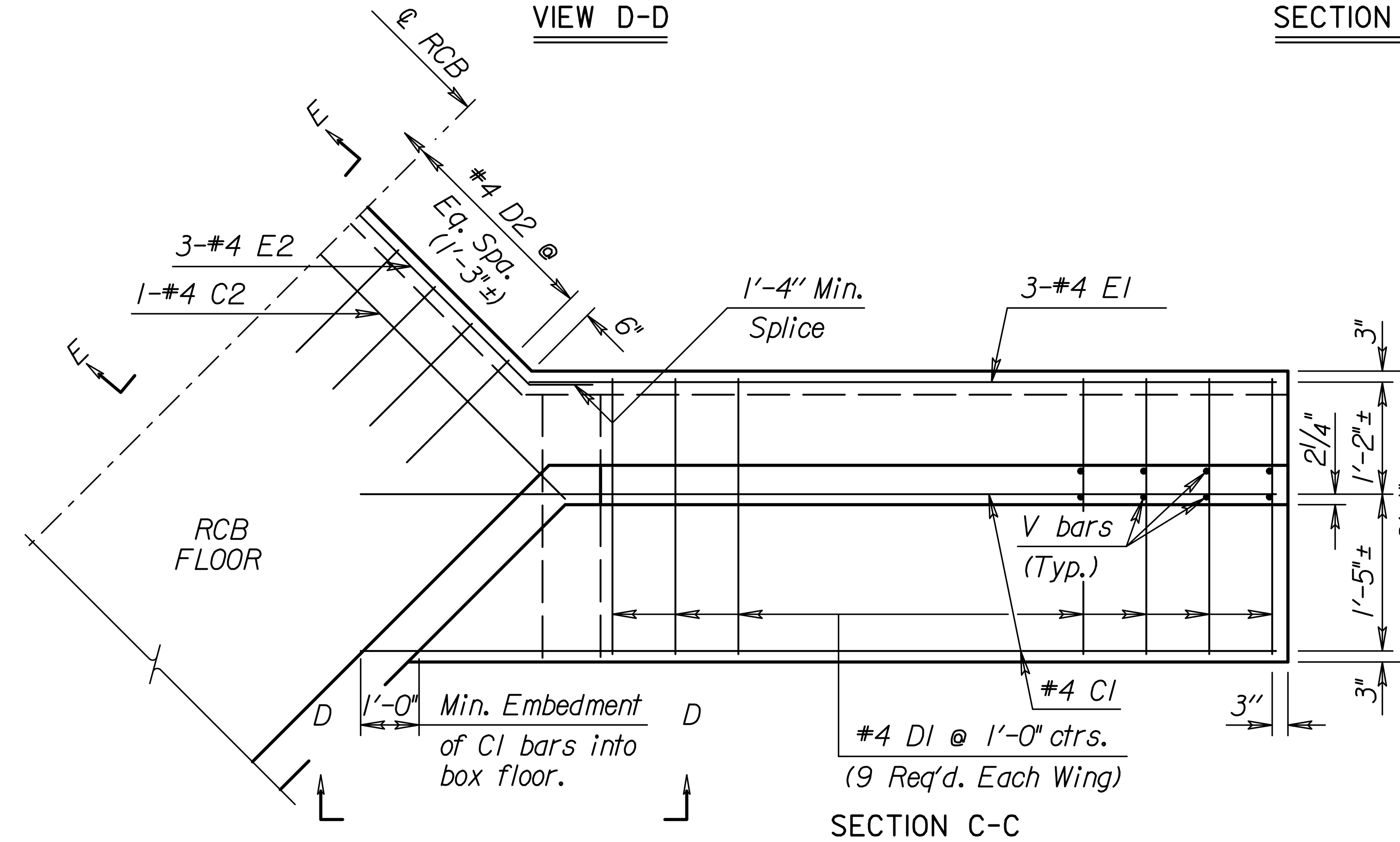


SECTION E-E

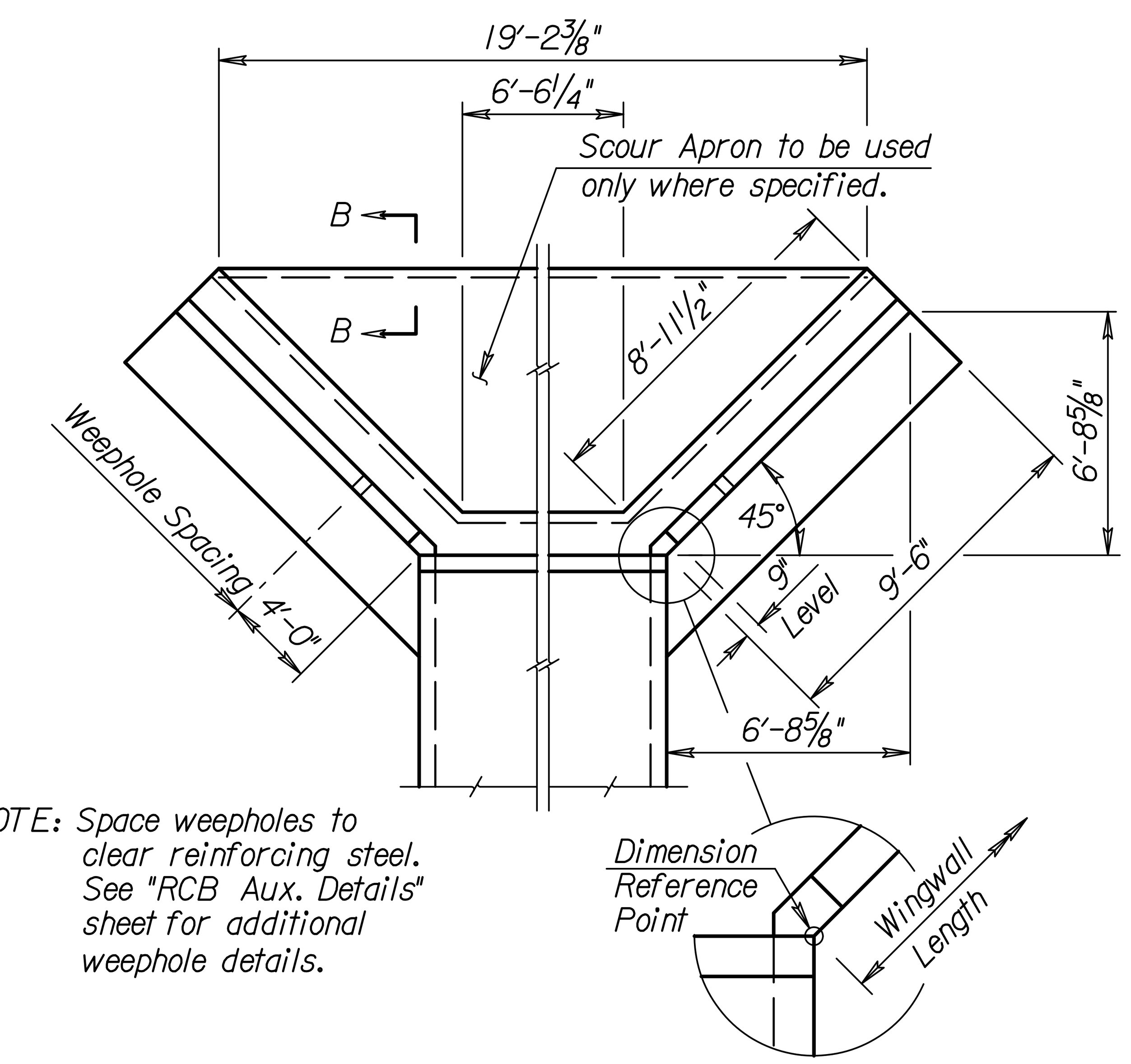
NOTE:
EF = Each Face
NS = Near Side
FS = Far Side
CJ = Const. Joint



SECTION B-B



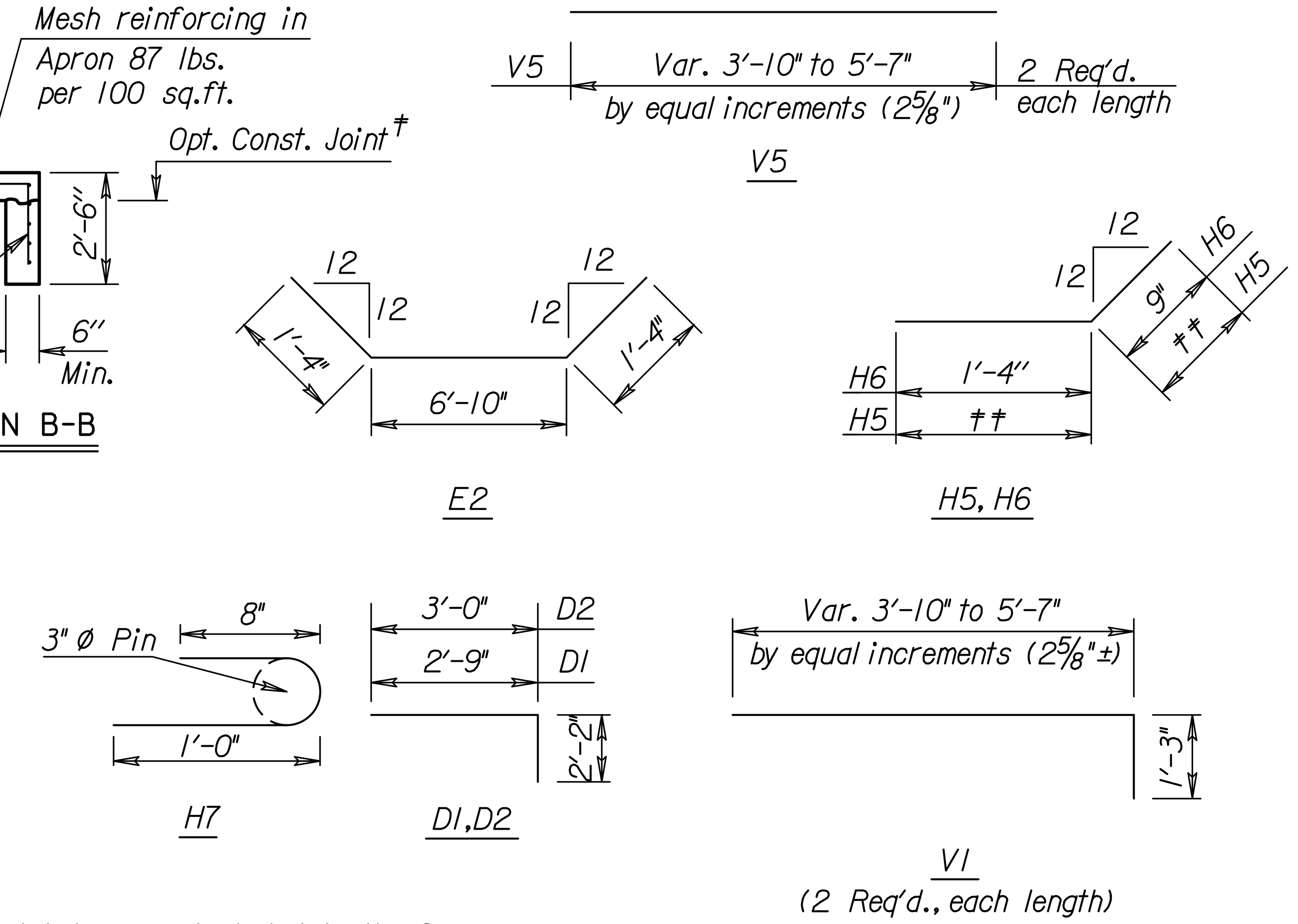
SECTION C-C



NOTE: Space weepholes to clear reinforcing steel. See "RCB Aux. Details" sheet for additional weephole details.

WING DIMENSIONS FOR NORMAL BOX

(3½:1 Embankment Slope)



BENDING DIAGRAM

(All dimensions are out to out of bars.)

†† Bend in Field

Quantities listed below are included in the Summary of Quantities shown on the RCB details.

WINGWALL QUANTITIES (One End Only)				
	Foundation Stabilization		Concrete (Gr. 4.0)	
Wingwalls	1.80	(C.Y.)	4.63	(C.Y.)
Apron	0.00	(C.Y.)	0.00	(C.Y.)
Soil Saver	0.00	(C.Y.)	0.00	(C.Y.)
Reinforcing Steel (Gr. 60)			524	Lbs.
Welded Wire Fabric (Wings)			51	Lbs.
Welded Wire Fabric (Apron)			0	Lbs.
Granular Backfill (Wingwalls)			12.00	C.Y.
Filter Fabric (subsidiary)			18.00	S.Y.

NOTE: Reinforcing Bar List is for both wings at one end of box only.

✳ See Bending Diagram

		#4C1	#4D1	#4E1	#4C2	#4D2	#4E2	#6V1	#4H1	#4H2	#4H5	#4H6	#4H7	#4V5	#4V6
0° Skew	No.	4	18✳	6	1	5 ✳	3 ✳	18	12	4	8 ✳	8✳	8✳	18	6
	Length	11'-7"	4'-11"	8'-9"	7'-8"	5'-2"	9'-6"	✳	8'-4"	8'-6"	1'-10"	2'-1"	1'-9"	✳	5'-0"

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Sta. 358+20.20

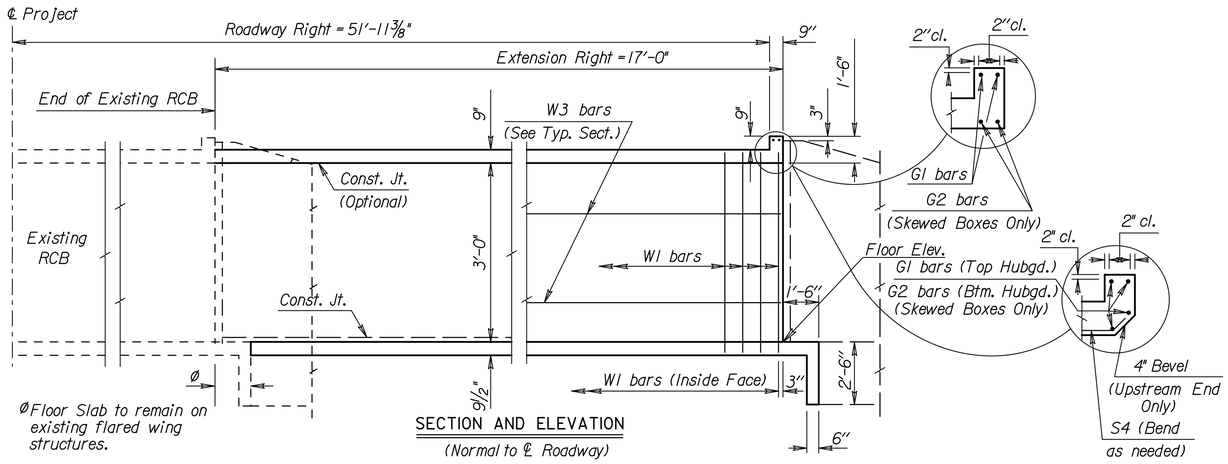
FLARED WINGWALLS
4 ft Rise (0*SKEW)

BR 10.00.04 Sedgwick Co.

FHWA APPROVAL 10-20-10		APP'D Terry L. Fleck	
DESIGNED	DETAILED	QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.

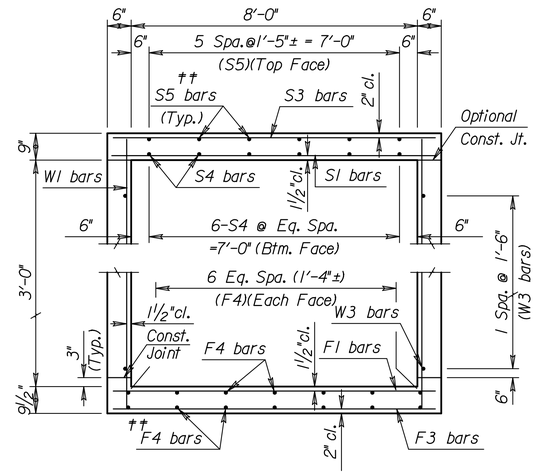
Plotted By: SJHorvatic
Plot Location:
File: c:\wcipw\d0409707\KA55540\rwg-01.dgn
Plot Date: 12/10/2021

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	17	83



SECTION AND ELEVATION

(Normal to ℄ Roadway)



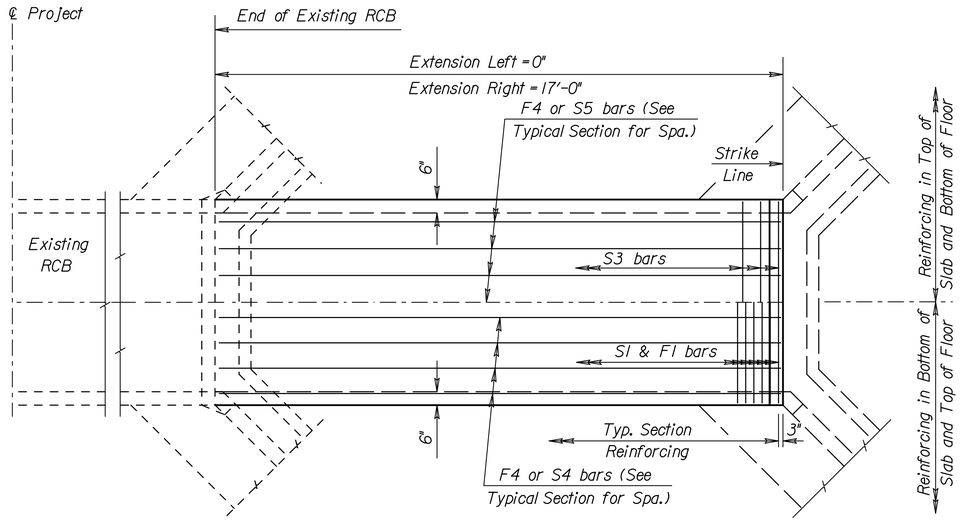
TYPICAL SECTION

Note:
S3 bars omitted unless grade box or slab thickness is greater than or equal to 12".

Note:
F3 bars omitted unless floor thickness is greater than or equal to 12.".

†† Omit S5 bars when S3 bars are omitted and omit the bottom layer of F4 bars when F3 bars are omitted.

See Standard No. RD 080 for additional details.



PLAN

GENERAL NOTES

DESIGN SPECIFICATION: AASHTO LRFD Spec., 2007 Ed., 2009 Int.
DESIGN LOADING: HL93
UNIT STRESSES: Grade 4.0 Concrete f'c = 4,000 p.s.i.
Reinforcing Steel fy = 60,000 p.s.i.

FILL HEIGHT: Unless otherwise noted, the Design Fill Height is measured from the riding surface at the culvert and includes the surfacing.

CONCRETE: Use concrete conforming to Grade 4.0 Concrete. Bevel all exposed edges with a ¾" triangular molding. Where Grade 4.0(AE) is specified, place this concrete in the top slab above the Construction Joint.

REINFORCING: Use reinforcing steel conforming to ASTM A615, Grade 60. All dimensions relative to reinforcing steel are to the centerline of the bar unless otherwise noted.

EXCAVATION: Excavation for culverts less than bridge length shall not be paid for directly but shall be subsidiary to Grade 4.0 Concrete. Excavation for RCB bridges shall be paid for as Class III Excavation.

SEAL COURSE: The Engineer may require a seal course. The seal course shall be unreinforced Concrete(Commercial Grade) with a minimum depth of 3 inches or as determined by the Engineer. Concrete for the seal course shall be paid for at the unit price set for Concrete for Seal Course.

FOUNDATION STABILIZATION: The Foundation Stabilization quantity has been calculated to the limits shown on the "RCB Auxiliary Details" sheet. The depth may be increased by the Engineer. The Contractor may underrun Foundation Stabilization under the barrel if founded on firm material and with the Engineer's approval. Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.

QUANTITIES: The quantities shown in the Culvert Summary include apron and/or soil saver quantities when they are required by the plans. Payment for additional quantities that result from including a seal course and/or a floating apron, as a change in the original plans, shall be made at the unit price bid for the various items involved.

GRANULAR BACKFILL (WINGWALLS):
See the "Auxiliary Details" sheet.

STRIKE LINE: Construct the wingwalls and that portion of the RCB outside the Strike Line level. Construct the wingwall footings with the culvert floor. See the wingwall detail sheets.

BRIDGE BACKWALL PROTECTION SYSTEM: For structures with this bid item in the Summary of Quantities. See the "Auxiliary Details" sheet.

⧖ For design purposes ONLY. Do NOT use for Construction — CULVERT SUMMARY — ⊕ includes any welded wire fabric

	Floor Elev.	Crown Gr. Elev.	⧖Design Fill Ht.	Skew	Wings	Scour Apron	Soil Saver	Concrete Barrel (Cu.Yds.)	Concrete Wings (Cu.Yds.)	Concrete Total (Cu.Yds.)	Reinf. Steel (Gr. 60) Barrel (Lbs.)	⊕Wings (Lbs.)	Total (Lbs.)	LRFR RATING FACTORS HL-93 Loading Inventory	Operating
Ext.Lt.	0.00	1422.90	3	0	None	No	No	0.00	0.00	0.00	0	0	0	1.34	1.74
Ext.Rt.	1416.91				Flared			10.42	3.66	14.07	1253	451	1703		

△ Epoxy Coated Bars

BAR SCHEDULE

	△F1 Size	Spa.	No.	Length		△F3 Size	Spa.	No.	Length	△F4 Size	No.	Length	△S1 Size	Spa.	No.	Length		△S3 Size	Spa.	No.	Length	△S4 Size	No.	Length	△S5 Size	No.	Length
Ext.Lt.	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ext.Rt.	6	6"	34	8'-8"		N/A	N/A	N/A	N/A	4	7	15'-2"	6	6"	37	8'-8"		N/A	N/A	N/A	8'-8"	4	6	16'-8"	4	N/A	16'-8"

	△K1 Size	Spa.	No.	Length	△K2 Size	Spa.	No.	Length	△W1 Size	Spa.	No.	Length	△ Size	Spa.	No.	Length	△W3 Size	No.	Length	△ Size	Spa.	No.	Length	△G1 Size	No.	Length	△G2 Size	No.	Length	Size	Spa.	No.	Length
Ext.Lt.	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Ext.Rt.	N/A	N/A	N/A		N/A	N/A	N/A		4	9"	46	4'-2"	N/A	N/A	N/A	N/A	4	4	16'-8"	N/A	N/A	N/A	N/A	5	2	8'-8"	N/A	N/A	N/A				

Minimum Splice Lengths	
#4	1'-5"
#5	1'-9"

SUMMARY OF QUANTITIES	
Concrete (Grade 4.0)	14 C.Y.
Concrete (Grade 4.0)(AE)	C.Y.
Bridge Backwall Protection System	20 S.Y.
Reinforcing Steel (Gr. 60)	1700 Lbs.
Reinforcing Steel (Gr. 60)(Epoxy Coated)	Lbs.
Class III Excavation	C.Y.
Foundation Stabilization	6 C.Y.
Concrete for Seal Course (Set)	1 C.Y.
Granular Backfill (Wingwalls)	8 C.Y.

NO.	DATE	REVISIONS	BY	APP'D
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Sta. 49+00.00

SINGLE 8 ft x 3 ft RCB
17.0 ft EXT. RT.

BR 1.8.3 P — Sedgwick Co.

FHWA APPROVAL	10-20-10	APP'D	Terry L. Fleck
DESIGNED	DETAILED	QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.

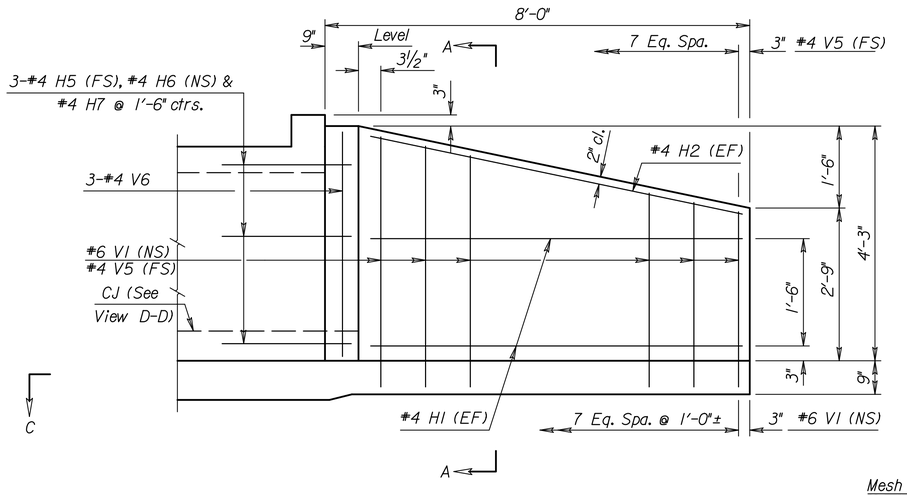
	SYSTEM PART	VERSION/ID
06	CADD V8A	12/6/2000
	DATABASE	5/4/2020
	RCB PROGRAM	7.1.21
	KBOX MODEL ID	1385
	CELL LIBRARY	5/4/2020

Plotted By: SJHarvatic
Plot Location:
File: c:\wcipw\d0409701\KA555401rcb-02.dgn
Plot Date: 12/10/2021

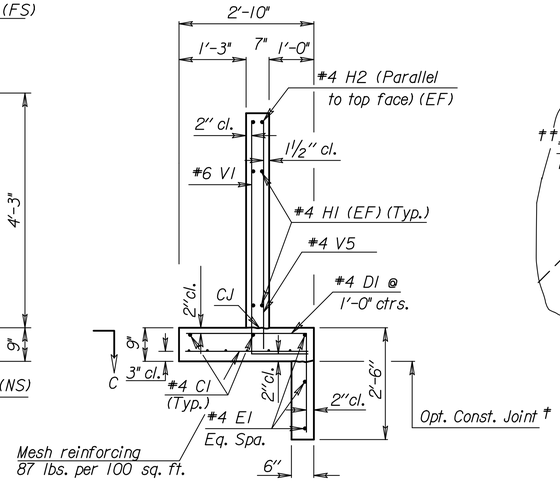
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	18	83

GENERAL NOTES

DESIGN SPECIFICATION: AASHTO LRFD Spec., 2007 Ed., 2009 Int.
DESIGN LOADING: HL93
UNIT STRESSES: Grade 4.0 Concrete; f'c = 4,000 p.s.i.
Reinforcing Steel; fy = 60,000 p.s.i.
CONCRETE: Grade 4.0 Concrete shall be used throughout. Bevel all exposed edges with a ¾" triangular moulding.
REINFORCING: All reinforcing shall conform to ASTM A615, Grade 60. Welded Wire Fabric shall conform to ASTM A185. All dimensions relative to reinforcing steel shall be to center-line of bar unless otherwise noted. Wire Reinforcing mesh shall be electrically welded and shall be composed of 6 x 6- W6 x W6 welded wire fabric and shall be classified as pounds of reinforcing and included in the total quantity for the bid item Reinforcing Steel (Gr. 60)
QUANTITIES: Wingwall Quantities include all quantities outside the neat lines of the box, excluding the hubguard.
APRON: A 5" concrete slab shall be constructed between the down-stream wings in locations subject to scour only when specified on the plans or by the Engineer.
BACKFILL MATERIAL: Use Granular Backfill material meeting the requirements of SB-1, SB-2, SCA-1, SCA-2.
Backfill all wings to limits shown on the "RCB Auxiliary Sheet".
FILTER FABRIC: Separate in-situ material from granular backfill with approved filter fabric complying with Section 1710.
Filter Fabric is subsidiary to "Granular Backfill".
FOUNDATION STABILIZATION: Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.



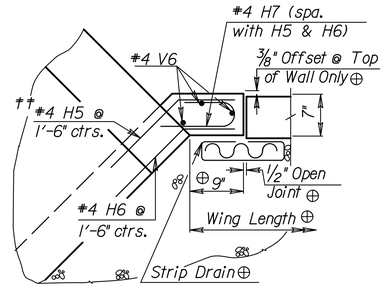
ELEVATION OF WINGWALL
(Backface Shown)



SECTION A-A

See "RCB Aux. Details" sheet for additional requirements.

⊕ Typical both wings



WINGWALL JOINT DETAIL
(Plan View)

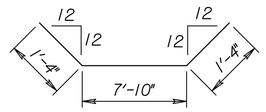
† NOTE: Const. Jt. may be used at Contractor's option when approved by the Engineer. D1 bars or mesh may be spliced thus: ⌐ Minimum overlap shall be 1'-3". No increase in quantities or cost shall be allowed when Contractor elects this option.

VIEW D-D

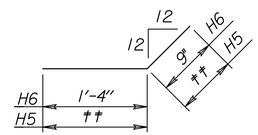
SECTION E-E

NOTE:
EF = Each Face
NS = Near Side
FS = Far Side
CJ = Const. Joint

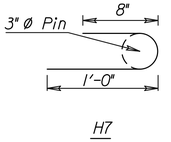
SECTION B-B



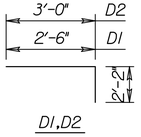
E2



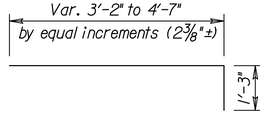
H5, H6



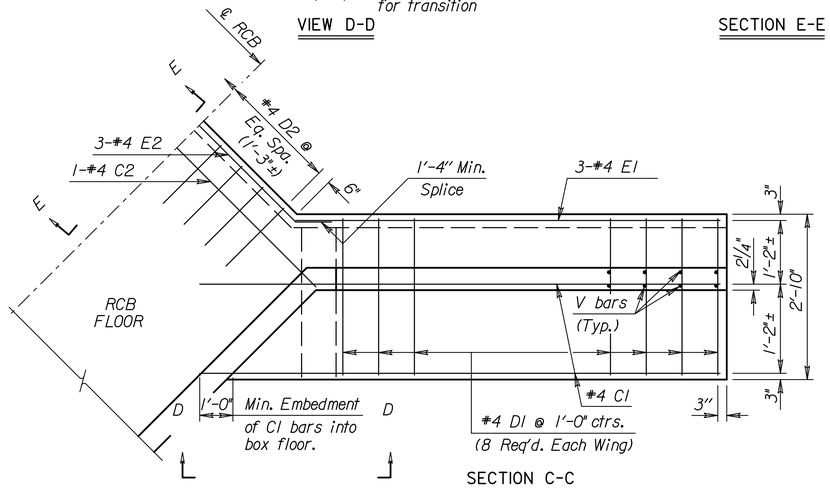
H7



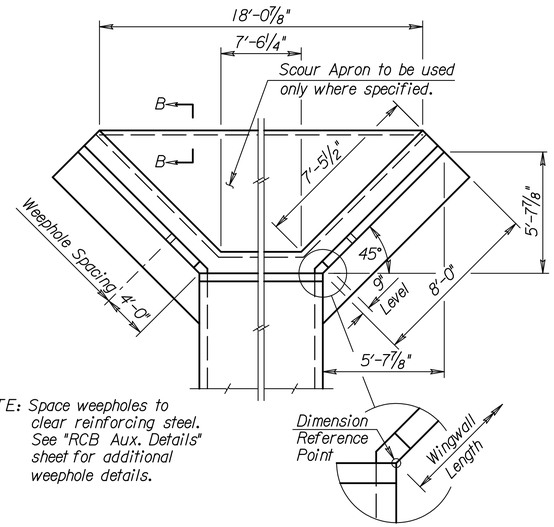
D1, D2



V1
(2 Req'd., each length)



SECTION C-C
(Plan of Footing)



NOTE: Space weepholes to clear reinforcing steel. See "RCB Aux. Details" sheet for additional weephole details.

WING DIMENSIONS FOR NORMAL BOX
(3½:1 Embankment Slope)

Quantities listed below are included in the Summary of Quantities shown on the RCB details.

WINGWALL QUANTITIES (One End Only)				
	Foundation Stabilization		Concrete (Gr. 4.0)	
Wingwalls	1.44	(C.Y.)	3.66	(C.Y.)
Apron	0.00	(C.Y.)	0.00	(C.Y.)
Soil Saver	0.00	(C.Y.)	0.00	(C.Y.)
Reinforcing Steel (Gr. 60)			411	Lbs.
Welded Wire Fabric (Wings)			39	Lbs.
Welded Wire Fabric (Apron)			0	Lbs.
Granular Backfill (Wingwalls)			8.00	C.Y.
Filter Fabric (subsidiary)			14.00	S.Y.

NOTE: Reinforcing Bar List is for both wings at one end of box only.

✳ See Bending Diagram

0° Skew		#4C1	#4D1	#4E1	#4C2	#4D2	#4E2	#6V1	#4H1	#4H2	#4H5	#4H6	#4H7	#4V5	#4V6
	No.	4	16✳	6	1	6 ✳	3✳	16	8	4	6✳	6 ✳	6 ✳	16	6
	Length	9'-10"	4'-8"	7'-3"	8'-8"	5'-2"	10'-6"	✳	6'-10"	7'-0"	1'-10"	2'-1"	1'-9"	✳	4'-0"

BENDING DIAGRAM

(All dimensions are out to out of bars.)

†† Bend in Field

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Sta. 49+00.00
FLARED WINGWALLS
3 ft Rise (0*SKEW)

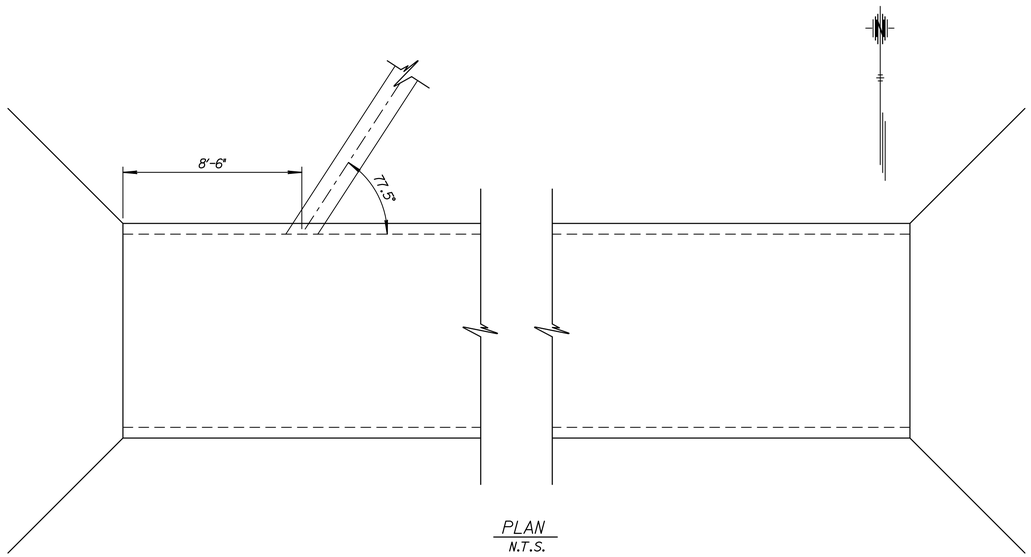
BR 10.00.03 Sedgwick Co.

FHWA APPROVAL		10-20-10	APP'D	Terry L. Fleck
DESIGNED	DETAILED		QUANTITIES	CADD
DESIGN CK.	DETAIL CK.		QUAN. CK.	CADD CK.

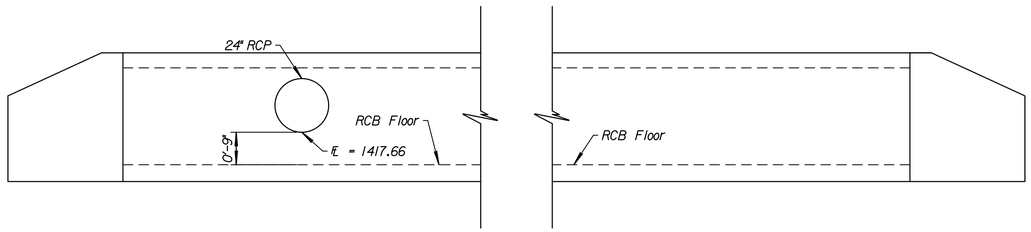
Plotted By: SJHorvatic | Plot Location:
File: c:\wc\pw\d0409707\KA555401rwg-02.dgn
Plot Date: 12/10/2021

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	19	83

DATE	BY	REFERENCES NOTED
		REFERENCES CHECKED

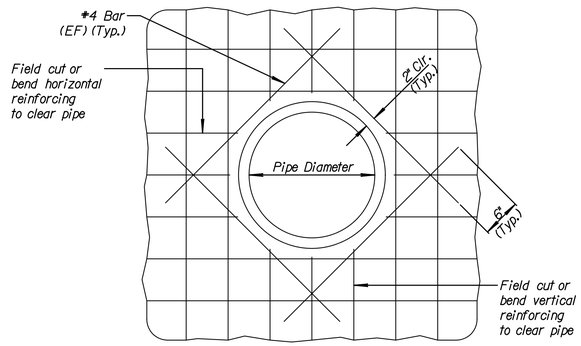


PLAN
N.T.S.



PROFILE
N.T.S.

RCB STA. 48+77.36



TYPICAL PIPE CONNECTION DETAIL
N.T.S.

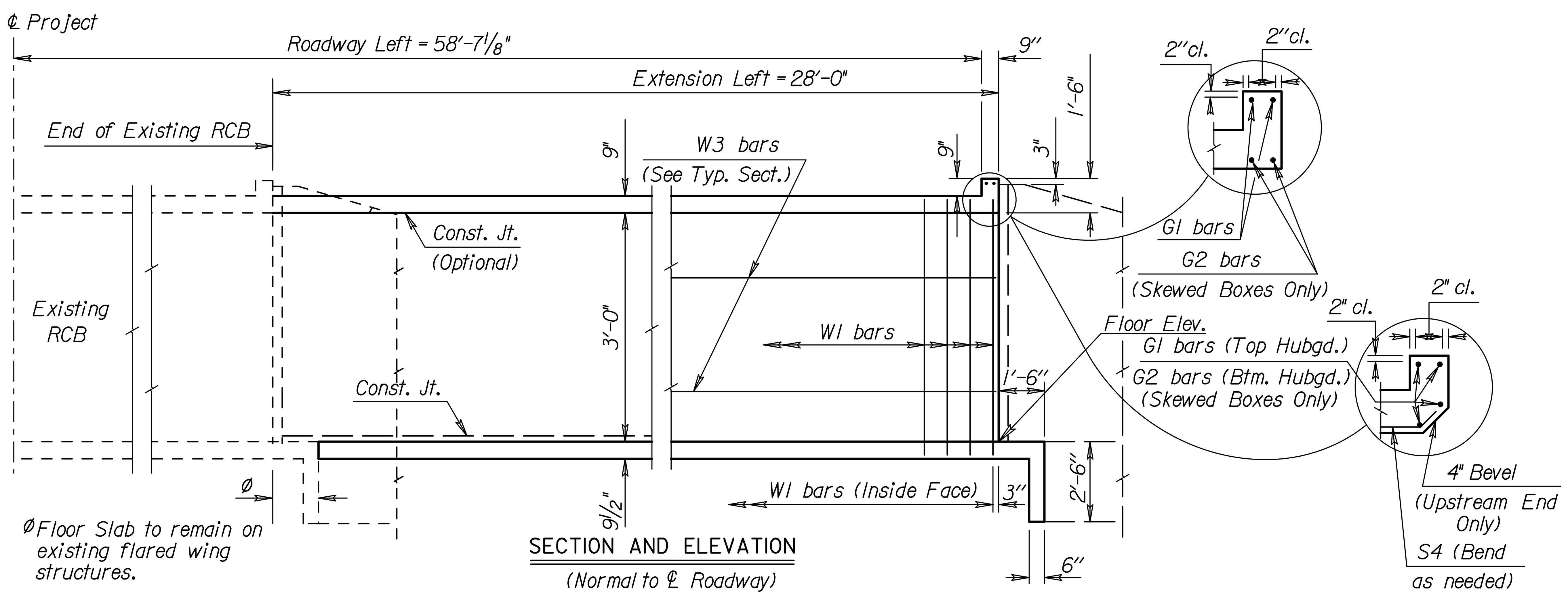
Note: Storm sewer connection to RCB shall not be paid for directly but shall be subsidiary to the RCB.

KANSAS DEPARTMENT OF TRANSPORTATION

STORM SEWER TO RCB
CONNECTION DETAIL

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipwd\0409707\KA5554401rcb-04.dgn

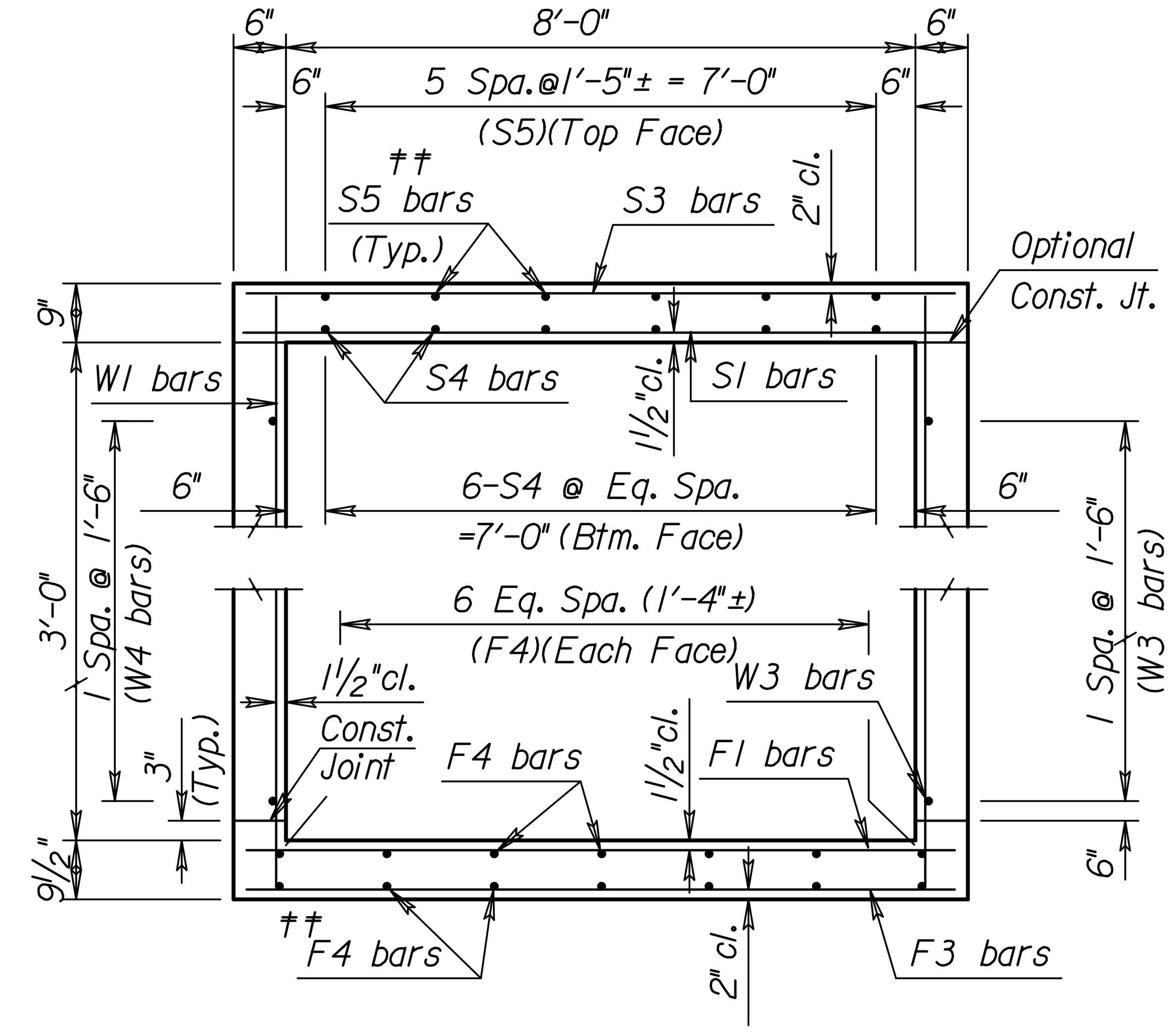
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	20	83



ØFloor Slab to remain on existing flared wing structures.

SECTION AND ELEVATION

(Normal to ℄ Roadway)



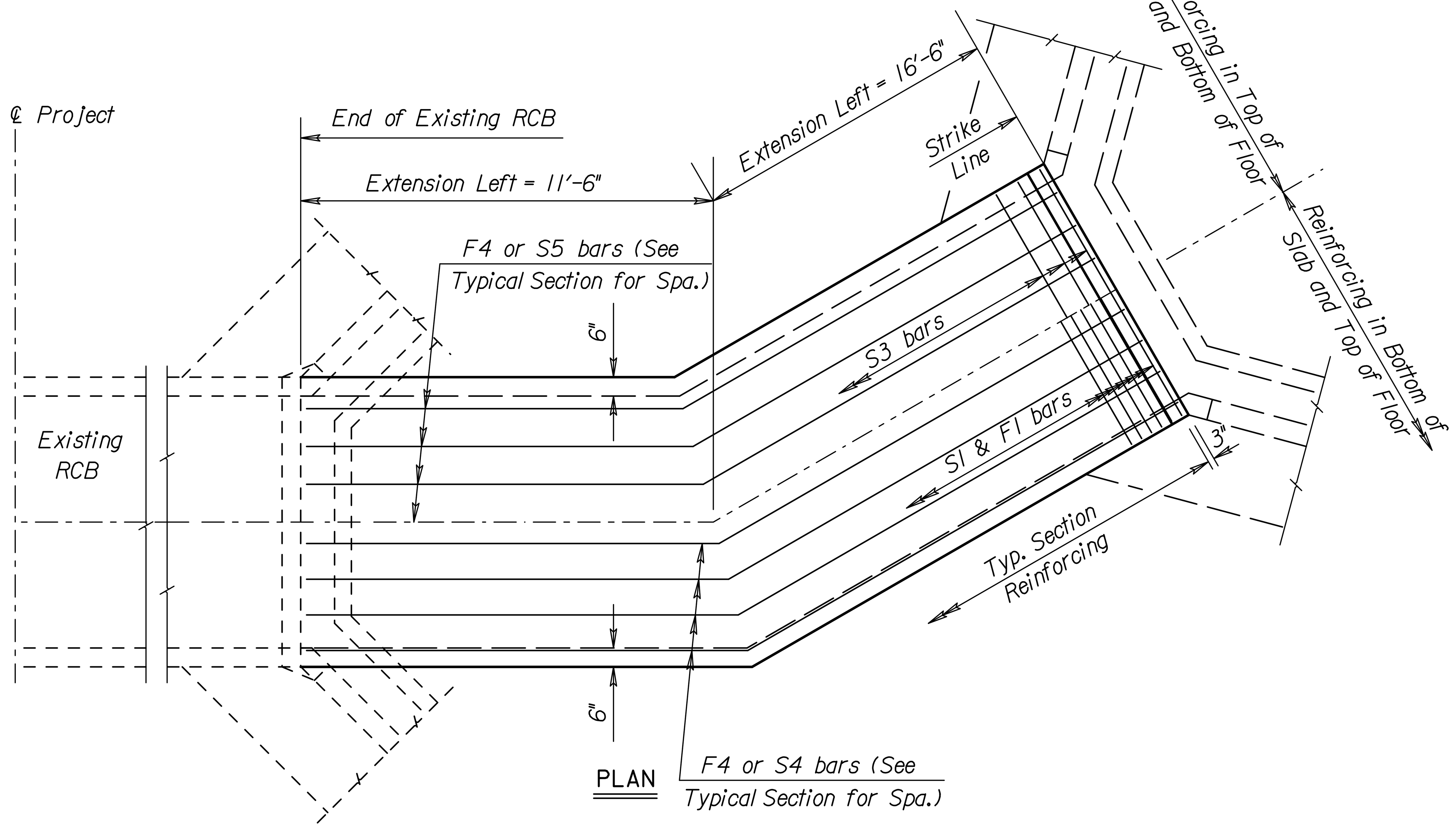
TYPICAL SECTION

Note:
S3 bars omitted unless grade box or slab thickness is greater than or equal to 12".

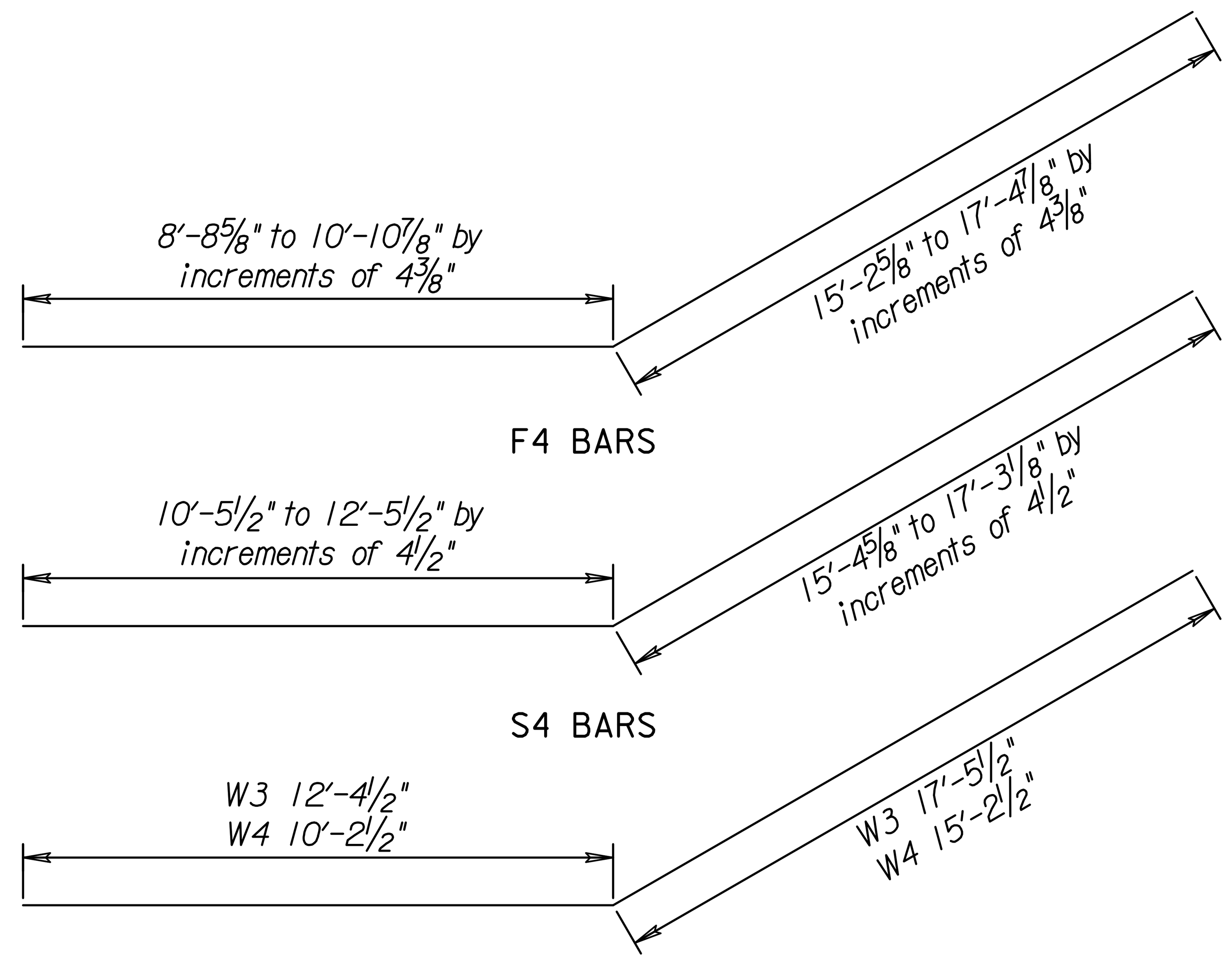
Note:
F3 bars omitted unless floor thickness is greater than or equal to 12.".

†† Omit S5 bars when S3 bars are omitted and omit the bottom layer of F4 bars when F3 bars are omitted.

See Standard No. RD 080 for additional details.



PLAN



BENDING DIAGRAM

GENERAL NOTES

DESIGN SPECIFICATION: AASHTO LRFD Spec., 2007 Ed., 2009 Int.
DESIGN LOADING: HL93
UNIT STRESSES: Grade 4.0 Concrete f'c = 4,000 p.s.i.
Reinforcing Steel fy = 60,000 p.s.i.

FILL HEIGHT: Unless otherwise noted, the Design Fill Height is measured from the riding surface at the culvert and includes the surfacing.

CONCRETE: Use concrete conforming to Grade 4.0 Concrete. Bevel all exposed edges with a 3/4" triangular molding. Where Grade 4.0(AE) is specified, place this concrete in the top slab above the Construction Joint.

REINFORCING: Use reinforcing steel conforming to ASTM A615, Grade 60. All dimensions relative to reinforcing steel are to the centerline of the bar unless otherwise noted.

EXCAVATION: Excavation for culverts less than bridge length shall not be paid for directly but shall be subsidiary to Grade 4.0 Concrete. Excavation for RCB bridges shall be paid for as Class III Excavation.

SEAL COURSE: The Engineer may require a seal course. The seal course shall be unreinforced Concrete(Commercial Grade) with a minimum depth of 3 inches or as determined by the Engineer. Concrete for the seal course shall be paid for at the unit price set for Concrete for Seal Course.

FOUNDATION STABILIZATION: The Foundation Stabilization quantity has been calculated to the limits shown on the "RCB Auxiliary Details" sheet. The depth may be increased by the Engineer. The Contractor may underrun Foundation Stabilization under the barrel if founded on firm material and with the Engineer's approval. Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.

QUANTITIES: The quantities shown in the Culvert Summary include apron and/or soil saver quantities when they are required by the plans. Payment for additional quantities that result from including a seal course and/or a floating apron, as a change in the original plans, shall be made at the unit price bid for the various items involved.

GRANULAR BACKFILL (WINGWALLS):
See the "Auxiliary Details" sheet.

STRIKE LINE: Construct the wingwalls and that portion of the RCB outside the Strike Line level. Construct the wingwall footings with the culvert floor. See the wingwall detail sheets.

BRIDGE BACKWALL PROTECTION SYSTEM: For structures with this bid item in the Summary of Quantities. See the "Auxiliary Details" sheet.

CULVERT SUMMARY

⌛ For design purposes ONLY. Do NOT use for Construction — ⊕ includes any welded wire fabric

	Floor Elev.	Crown Gr. Elev.	⌛Design Fill Ht.	Skew	Wings	Scour Apron	Soil Saver	Concrete: Barrel (Cu.Yds.)	Concrete: Wings (Cu.Yds.)	Concrete: Total (Cu.Yds.)	Reinf. Steel (Gr. 60): Barrel (Lbs.)	Reinf. Steel (Gr. 60): ⊕Wings (Lbs.)	Reinf. Steel (Gr. 60): Total (Lbs.)	LRFR RATING FACTORS HL-93 Loading: Inventory	LRFR RATING FACTORS HL-93 Loading: Operating
Ext.Lt.	1417.52	1422.69	3	0	Flared	No	No	17.28	3.66	20.93	2164	451	2615	1.34	1.74
Ext.Rt.	0.00				None			0.00	0.00	0.00	0	0	0		

△ Epoxy Coated Bars
⚹ See Bending Diagram

Minimum Splice Lengths	
#4	1'-5"
#5	1'-9"

BAR SCHEDULE

	△F1								△F3				△F4			△S1								△S3				△S4			△S5		
	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	No.	Length	Size	No.	Length
Ext.Lt.	6	6"	61	8'-8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8'-8"	4	7	Varies⚹	6	6"	64	8'-8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8'-8"	4	6	Varies⚹	4	N/A	27'-8"
Ext.Rt.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

	△K1				△K2				△W1				△				△W3			△W4			△G1			△G2						
	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	No.	Length	Size	No.	Length	Size	No.	Length	Size	No.	Length	Size	Spa.	No.	Length
Ext.Lt.	N/A	N/A	N/A		N/A	N/A	N/A		4	9"	76	4'-2"	N/A	N/A	N/A	N/A	4	2	29'-10"	4	2	25'-5"	5	2	8'-8"	N/A	N/A	N/A				
Ext.Rt.	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				

SUMMARY OF QUANTITIES		
Concrete (Grade 4.0)	21	C.Y.
Concrete (Grade 4.0)(AE)		C.Y.
Bridge Backwall Protection System	33	S.Y.
Reinforcing Steel (Gr. 60)	2615	Lbs.
Reinforcing Steel (Gr. 60)(Epoxy Coated)		Lbs.
Class III Excavation		C.Y.
Foundation Stabilization	8	C.Y.
Concrete for Seal Course (Set)	1	C.Y.
Granular Backfill (Wingwalls)	8	C.Y.

NO.	DATE	REVISIONS	BY	APP'D
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Sta. 49+00.00

SINGLE 8 ft x 3 ft RCB
28.0 ft EXT. LT.

BR 1.8.3 P — Sedgwick Co.

FHWA APPROVAL	10-20-10	APP'D	Terry L. Fleck
DESIGNED	DETAILED	QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.

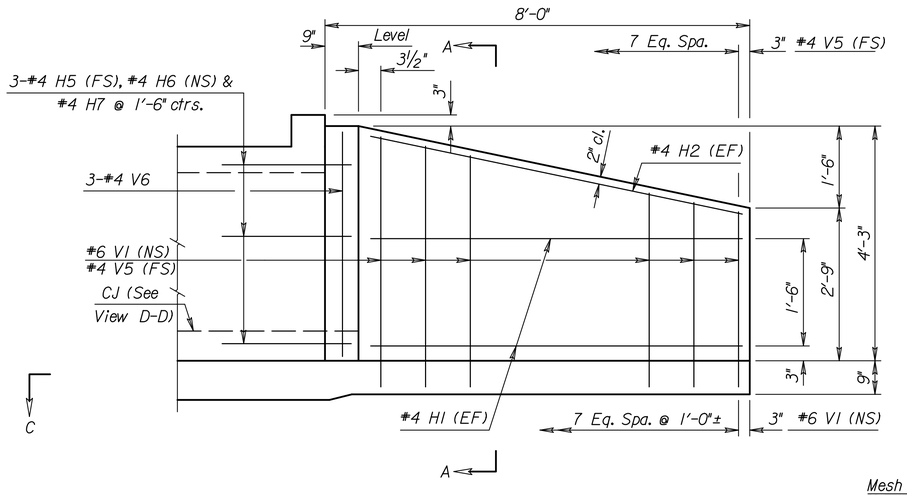
SYSTEM PART	VERSION/ID
CADD VBA	12/15/2010
DATABASE	5/4/2020
RCB PROGRAM	7.1.21
KBOX MODEL ID	1385
CELL LIBRARY	5/4/2020
06	

Plotted By: SJHorvatic — Plot Location:
File: c:\wcipw\d0409707\KA555401rcb-03.dgn
Plot Date: 12/10/2021

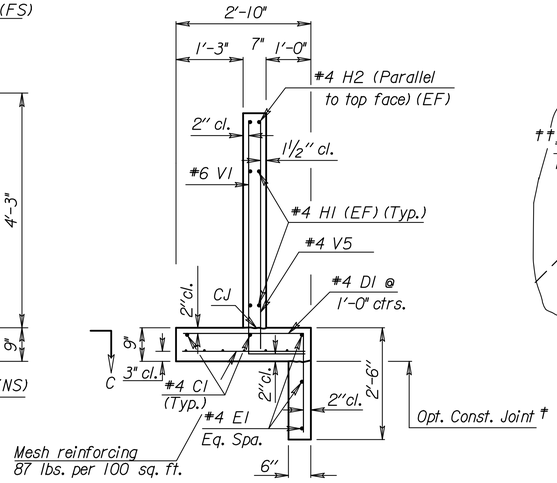
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	21	83

GENERAL NOTES

DESIGN SPECIFICATION: AASHTO LRFD Spec., 2007 Ed., 2009 Int.
DESIGN LOADING: HL93
UNIT STRESSES: Grade 4.0 Concrete; f'c = 4,000 p.s.i.
Reinforcing Steel; fy = 60,000 p.s.i.
CONCRETE: Grade 4.0 Concrete shall be used throughout. Bevel all exposed edges with a ¾" triangular moulding.
REINFORCING: All reinforcing shall conform to ASTM A615, Grade 60. Welded Wire Fabric shall conform to ASTM A185. All dimensions relative to reinforcing steel shall be to center-line of bar unless otherwise noted. Wire Reinforcing mesh shall be electrically welded and shall be composed of 6 x 6- W6 x W6 welded wire fabric and shall be classified as pounds of reinforcing and included in the total quantity for the bid item Reinforcing Steel (Gr. 60)
QUANTITIES: Wingwall Quantities include all quantities outside the neat lines of the box, excluding the hubguard.
APRON: A 5" concrete slab shall be constructed between the down-stream wings in locations subject to scour only when specified on the plans or by the Engineer.
BACKFILL MATERIAL: Use Granular Backfill material meeting the requirements of SB-1, SB-2, SCA-1, SCA-2.
Backfill all wings to limits shown on the "RCB Auxiliary Sheet".
FILTER FABRIC: Separate in-situ material from granular backfill with approved filter fabric complying with Section 1710.
Filter Fabric is subsidiary to "Granular Backfill".
FOUNDATION STABILIZATION: Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.



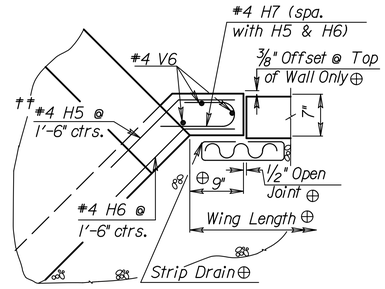
ELEVATION OF WINGWALL
(Backface Shown)



SECTION A-A

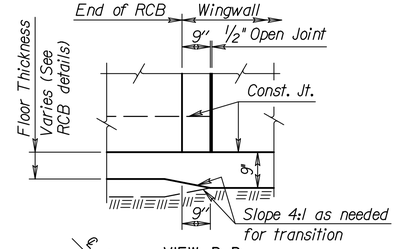
See "RCB Aux. Details" sheet for additional requirements.

⊕ Typical both wings

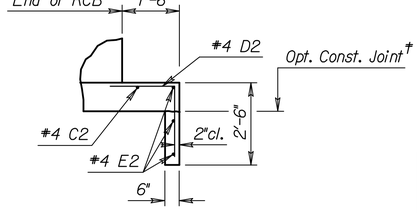


WINGWALL JOINT DETAIL
(Plan View)

† NOTE: Const. Jt. may be used at Contractor's option when approved by the Engineer. D1 bars or mesh may be spliced thus: ⌐ Minimum overlap shall be 1'-3". No increase in quantities or cost shall be allowed when Contractor elects this option.

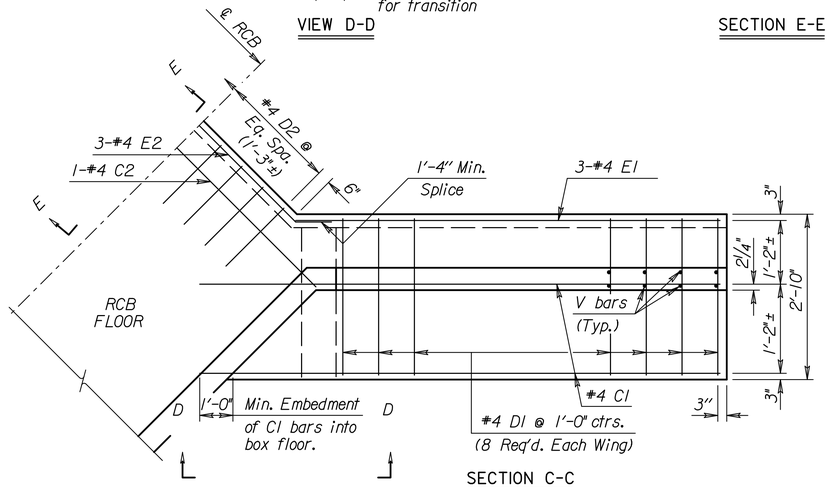


VIEW D-D

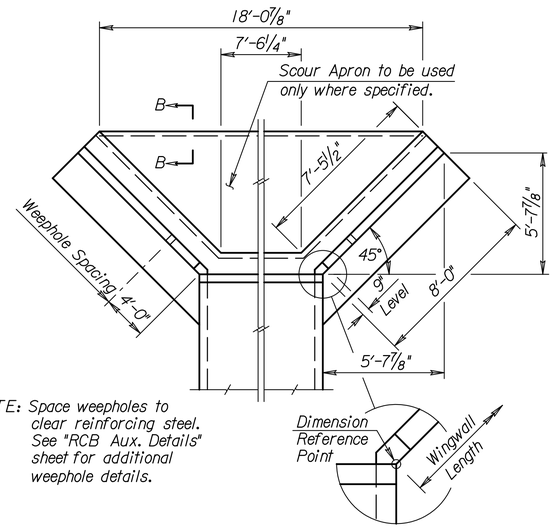


SECTION E-E

NOTE:
EF = Each Face
NS = Near Side
FS = Far Side
CJ = Const. Joint

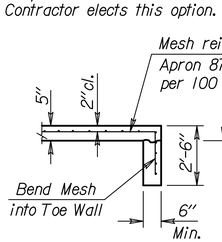


SECTION C-C
(Plan of Footing)

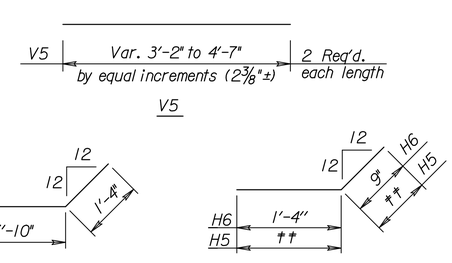


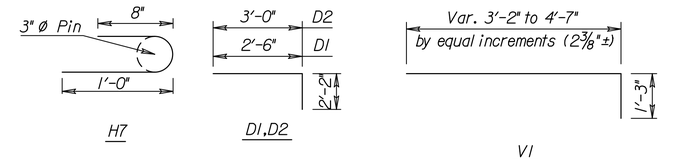
NOTE: Space weepholes to clear reinforcing steel. See "RCB Aux. Details" sheet for additional weephole details.

WING DIMENSIONS FOR NORMAL BOX
(3½:1 Embankment Slope)



SECTION B-B





BENDING DIAGRAM
(All dimensions are out to out of bars.)
†† Bend in Field

Quantities listed below are included in the Summary of Quantities shown on the RCB details.

WINGWALL QUANTITIES (One End Only)				
	Foundation Stabilization		Concrete (Gr. 4.0)	
Wingwalls	1.44	(C.Y.)	3.66	(C.Y.)
Apron	0.00	(C.Y.)	0.00	(C.Y.)
Soil Saver	0.00	(C.Y.)	0.00	(C.Y.)
Reinforcing Steel (Gr. 60)			411	Lbs.
Welded Wire Fabric (Wings)			39	Lbs.
Welded Wire Fabric (Apron)			0	Lbs.
Granular Backfill (Wingwalls)			8.00	C.Y.
Filter Fabric (subsidiary)			14.00	S.Y.

NOTE: Reinforcing Bar List is for both wings at one end of box only.

✳ See Bending Diagram

0° Skew		#4C1	#4D1	#4E1	#4C2	#4D2	#4E2	#6V1	#4H1	#4H2	#4H5	#4H6	#4H7	#4V5	#4V6
	No.	4	16✳	6	1	6 ✳	3✳	16	8	4	6✳	6 ✳	6 ✳	16	6
	Length	9'-10"	4'-8"	7'-3"	8'-8"	5'-2"	10'-6"	✳	6'-10"	7'-0"	1'-10"	2'-1"	1'-9"	✳	4'-0"

Plotted By: SJHorvatic | Plot Location:
File: c:\wc\pw\d0409707\KA555401rwg-03.dgn
Plot Date: 12/10/2021

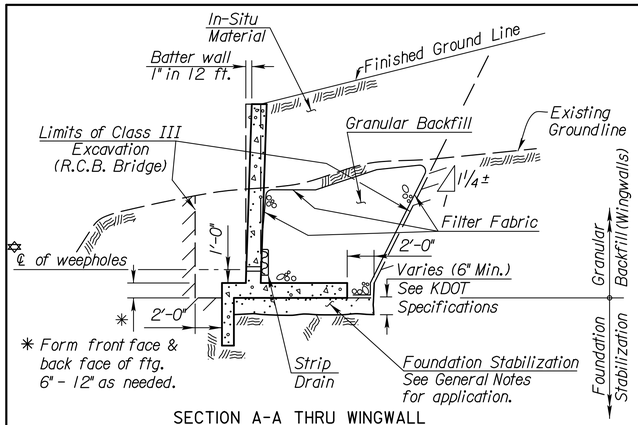
NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Sta. 49+00.00
FLARED WINGWALLS
3 ft Rise (0*SKEW)

BR 10.00.03 Sedgwick Co.

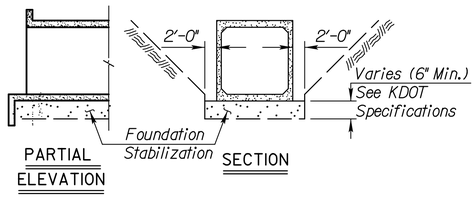
FHWA APPROVAL	10-20-10	APP'D	Terry L. Fleck
DESIGNED	DETAILED	QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	22	83

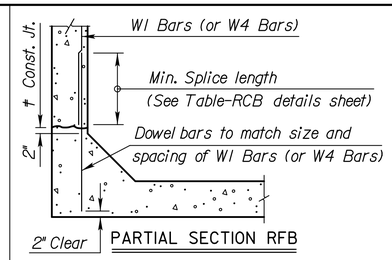


SECTION A-A THRU WINGWALL

Granular Backfill And Foundation Stabilization



PARTIAL ELEVATION SECTION



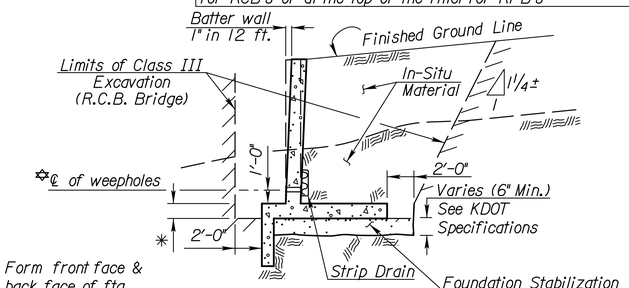
PARTIAL SECTION RFB

OPTIONAL BAR DETAIL

The Contractor shall have the option of using Dowel Bars to match vertical wall bars as shown, however no allowance will be made for additional steel required for bar laps.

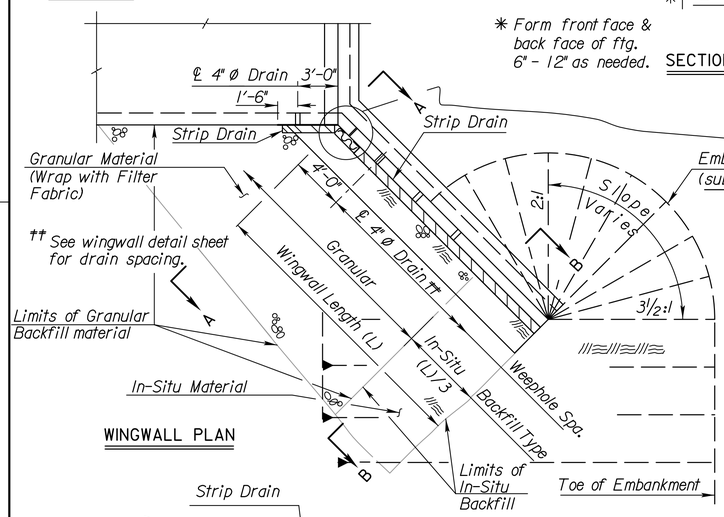
† OPTIONAL COLD JOINT

The Contractor has the option of placing the Lower Horizontal Construction Joint at the top of the slab for RCB's or at the top of the fillet for RFB's



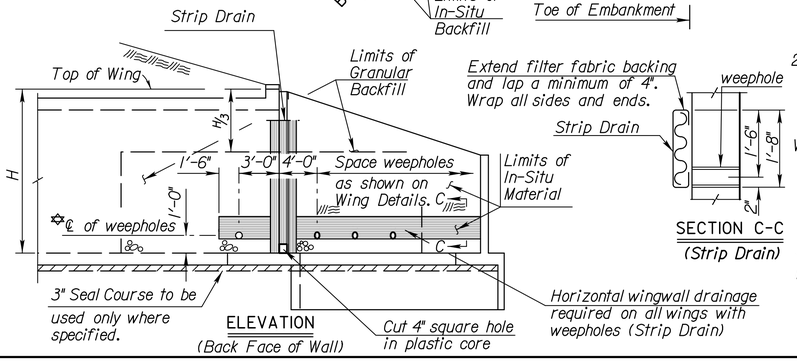
SECTION B-B THRU WINGWALL

✳ *Weep holes will be adjusted up by the amount of embeddment shown on BR025 if the structure is embedded.*

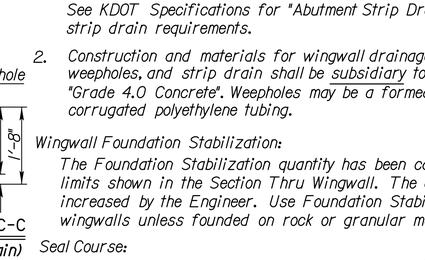


WINGWALL PLAN

VERTICAL STRIP DRAIN



ELEVATION (Back Face of Wall)



SECTION C-C (Strip Drain)

GENERAL NOTES

Wingwall Drainage:

1. *All wingwalls with weepholes shall have horizontal and vertical wingwall drainage as shown. Strip drains will be used. See KDOT Specifications for "Abutment Strip Drains" for strip drain requirements.*
2. *Construction and materials for wingwall drainage, including weepholes, and strip drain shall be subsidiary to the bid item, "Grade 4.0 Concrete". Weepholes may be a formed opening or corrugated polyethylene tubing.*

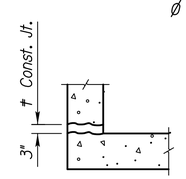
Wingwall Foundation Stabilization:

The Foundation Stabilization quantity has been calculated to the limits shown in the Section Thru Wingwall. The depth may be increased by the Engineer. Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.

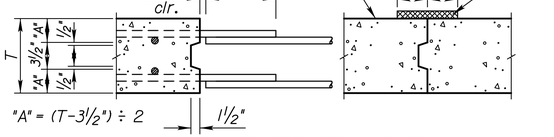
Seal Course:

1. *Seal Course consisting of 3" min. of Commercial Grade Concrete shall be constructed to the limits directed by the Engineer. No reinforcing in the floor of the slab or wall footing shall be placed until the Seal Course has gained sufficient strength to permit working upon it without injury.*

Ø *Longitudinal bars shall extend through the joint to provide a minimum lap equal to the required splice length. See RCB Details Sh. for required splice length.*



PARTIAL SECTION RCB

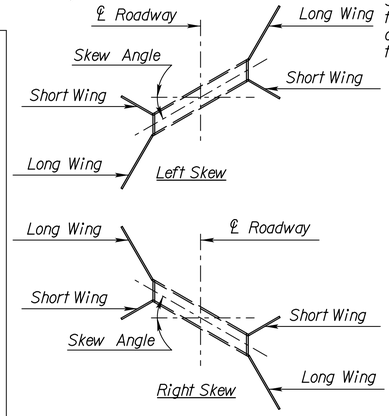


VERTICAL CONSTRUCTION JOINTS

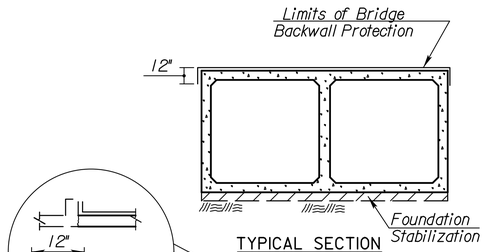
NOTE: Vertical construction joints shall be perpendicular to the longitudinal axis of the RCB and shall be placed at any location as needed for construction and as approved by the Engineer.

NOTE: Horizontal construction joints shall be a roughened finish.

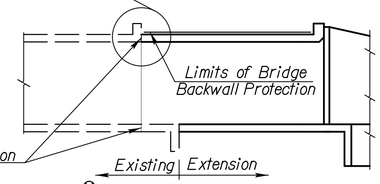
NOTE: Barrel Construction Joints located in a median with less than 5 ft. of fill or at locations specified by the Engineer, shall be protected by a bentonite based system as shown. Place the bentonite on the exterior walls and top slab. See requirements for bentonite in the KDOT Specifications for "Bridge Backwall Protection System". Material and installation of the bentonite system shall be subsidiary to the bid item "Grade 4.0 Concrete".



PLAN VIEW SKEWED R.C.B.

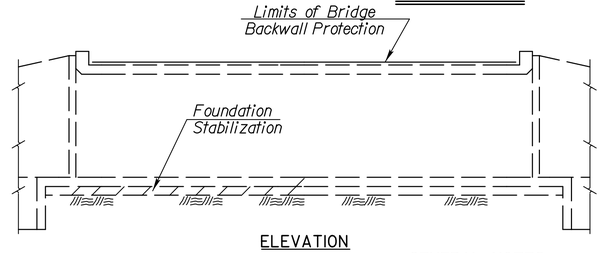


TYPICAL SECTION



⊗ *See "Typical Culvert Extension" RD080 for additional information.*

⊗ BOX EXTENSION



ELEVATION (New Construction)

GENERAL NOTES

Bridge Backwall Protection System:

1. *For all structures with less than or equal to 2'-0" of fill, apply a "Bridge Backwall Protection System" from Section 1700 to the limits shown. Do not place hot mix asphalt directly on this material.*
2. *Use a "non-coal tar" material from KDOT's approved list.*
3. *Protect this material from damage during backfilling. Repair at no additional cost.*
4. *When the Plans show hot mix asphalt placed directly on the slab, substitute "Pavement Water Proofing" material from Section 800, this material shall be subsidiary. Wait 28 days after top slab is completed before applying this material.*

GENERAL NOTES

Foundation Stabilization:

The depth of Foundation Stabilization may be increased by the Engineer. The Contractor may underrun Foundation Stabilization under the barrel if founded on firm material and with the Engineer's approval. Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.

Granular Backfill (Wingwalls):

1. *Granular Backfill shall be used to backfill behind wingwalls to the limits shown in the WINGWALL PLAN and Elevation detail. Granular Backfill construction may be used separately or combined with Foundation Stabilization as directed by the Engineer.*
2. *Measurement for the bid item, "Granular Backfill (Wingwalls)", shall be measured in Cubic Yards to the theoretical limits as shown.*
3. *Material for Granular Backfill (Wingwalls) shall conform to the requirements of SB-1, SB-2, SCA-1 or SCA-2.*
4. *Consolidate Granular Backfill using hand equipment only. Avoid over consolidation.*
5. *Use filter fabric complying with Section 1710. Use only within the limits of Granular Backfill to separate from the In-Situ Material. Filter Fabric is subsidiary to "Granular Backfill".*

In-Situ Backfill (Wingwalls):

1. *Use any material found within the project limits except Highly Plastic Clay(s) or organic material. The material is subsidiary to "Granular Backfill".*
2. *Use Type "B" Compaction.*
3. *Use only hand or walk behind equipment for Compaction.*

NO.	DATE	REVISIONS	BY	APP'D
7	2/6/18	Filter Fabric Clarification	MLL	JPJ
6	6/7/17	Filter Fabric Modification	JPJ	JPJ
5	10/11/13	Granular Backfill Limits	JPJ	LRR
4	10/11/12	Added Weep Hole Note	JPJ	TLF
3	8/2/12	Modified Backwall Notes	JPJ	TLF
2	3/7/12	Added Filter Fabric to Detail	JPJ	TLF
1	12/15/11	Added Bridge Backwall Protection	JPJ	TLF

KANSAS DEPARTMENT OF TRANSPORTATION

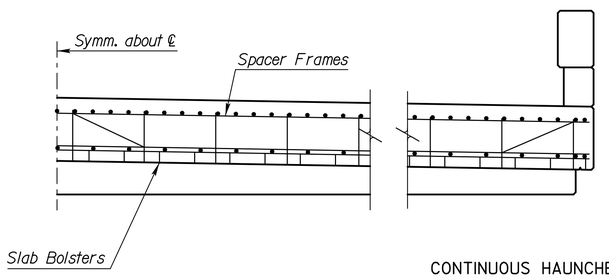
RCB AUXILIARY DETAILS (LRFD)

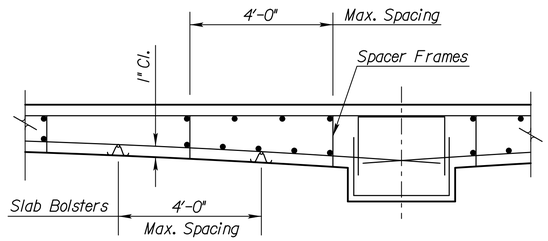
BR020B

FHWA APPROVAL		4/17/10	APP'D	TERRY L. FLECK	
DESIGNED	JPJ	DETAILED	RAA	QUANTITIES	CADD RAA
DESIGN CK.	JSR	DETAIL CK.	JPJ	QUAN.CK.	CADD CK. JPJ

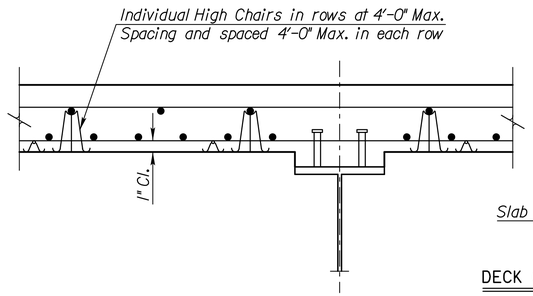
Std. Base File: br020.dgn
Plotted By: SJHorvatic
Plot Location:
File: c:\wcjpw\d0409707\KA555401\brr020b-01.dgn
Plot Date: 12/10/2021

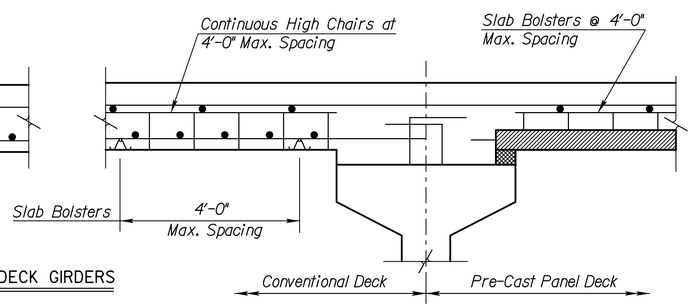
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	23	83



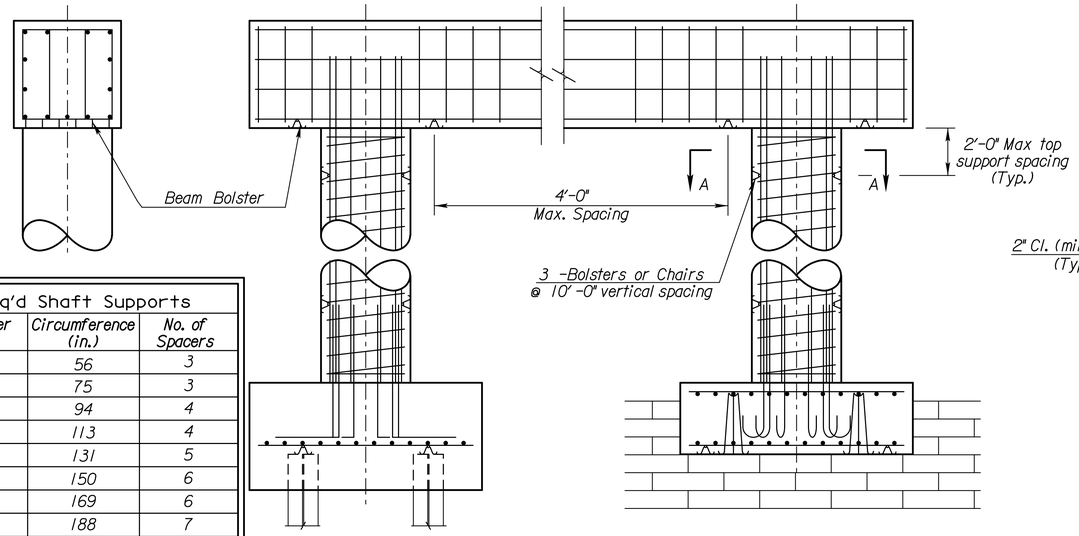


CONTINUOUS HAUNCHED SLAB



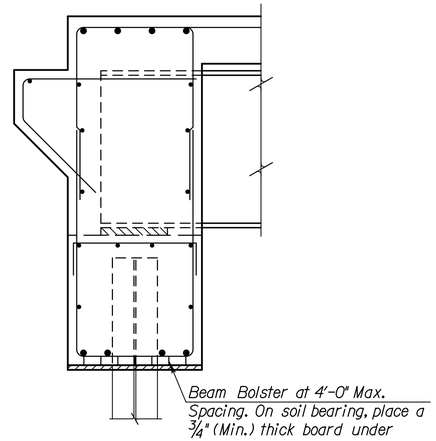


DECK GIRDERS

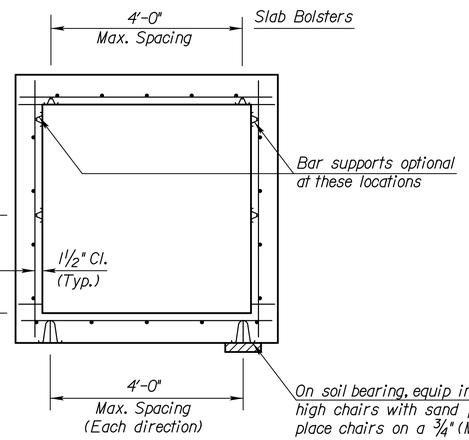


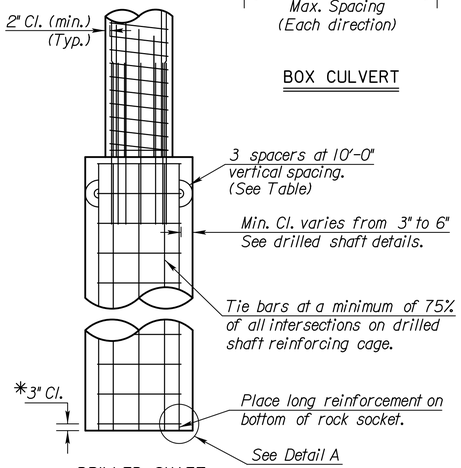
PIER

Req'd Shaft Supports		
Diameter (in.)	Circumference (in.)	No. of Spacers
18	56	3
24	75	3
30	94	4
36	113	4
42	131	5
48	150	6
54	169	6
60	188	7
66	207	7
72	226	8
78	244	9
84	263	9
90	282	10
96	301	11
102	320	11
108	339	12



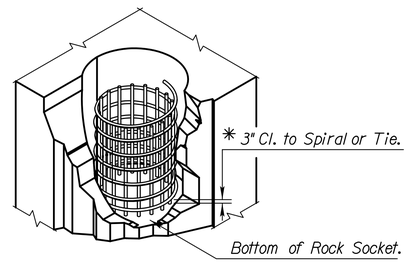
ABUTMENT





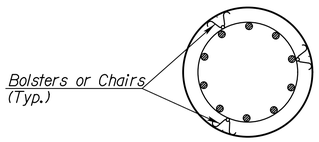
BOX CULVERT

DRILLED SHAFT



DETAIL A

* Note: Longitudinal reinforcing steel is placed on the bottom of the rock socket. Maintain 3" clearance from the bottom of rock socket to the first spiral or tie bar.



SECTION A-A

GENERAL NOTES

Reference is made to the latest edition of the CRSI "Manual of Standard Practice" for recommended industry practices concerning reinforcing steel.

Use only the following types of bar supports:

1) Wire Bar Supports:

a) Epoxy coated reinforcing: Class 1 Protection
b) Non-epoxy coated reinforcing: Class 1, 2, or 3 Protection

2) Plastic Bar Supports

3) Supplementary bars

When securing epoxy coated reinforcement, use tie wires or metal clips that are epoxy or plastic coated.

Do not weld reinforcing steel to bar supports or to other reinforcing steel. Shop weld spacer frames for haunched slabs.

Tie bars at all intersections around the perimeter of each mat and at not less than 2'-0" centers or at every intersection, whichever is greater.

Where more than one length of bar support is required, lap the end legs so they are locked or tied together.

Use proper height supports to maintain the distance between the reinforcing and the formed surface or the top surface of deck slabs within 1/4" of that indicated on the plans.

Spacings shown are maximums. Use sufficient supports, as determined by the Engineer, to retain the reinforcing steel in position.

Construct any platforms, required for the support of workers and/or equipment during concrete placement, directly on the forms and not on the reinforcing steel.

Designs and arrangements of Supports or Spacers other than as shown on this sheet, may be used with the permission of the Engineer.

NO.	DATE	REVISIONS	BY	APP'D
5	11-10-10	Column Bar Supports Req'd	JPJ	TLF
4	12-01-05	Drilled Shaft Spiral Steel Placement	JPJ	KFH
3	8-21-00	Added Pre-Cast Panel Detail	RAM	KFH
2	12-20-99	Added Haunched Slab Bolsters	RAM	KFH
1	12-09-99	Revised Drilled Shaft Clearance	RAM	KFH

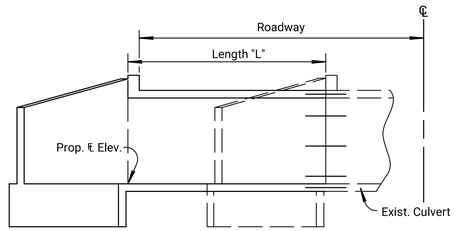
KANSAS DEPARTMENT OF TRANSPORTATION

SUPPORTS AND SPACERS FOR REINFORCING STEEL

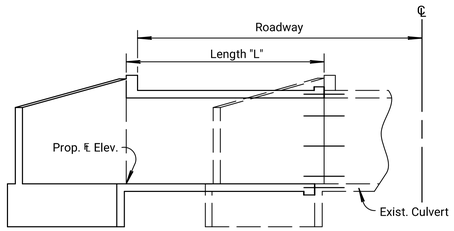
BRI20

FHWA APPROVAL		11-17-10	APP'D	Terry L. Fleck	
DESIGNED	RAM	DETAILED	RAA	QUANTITIES	CADD RAA
DESIGN CK.	LRR	DETAIL CK.	RAM	QUAN.CK.	CADD CK. RAM

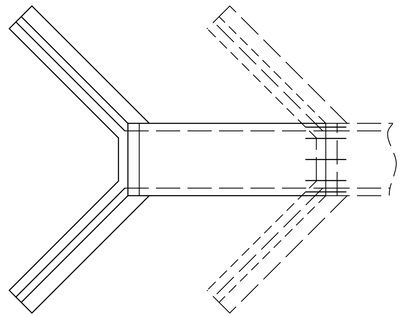
Std. Base File: br120.dgn
Plotted By: SJHorvatic
File: c:\wcipw\d0409707\KA555401\brr120-01.dgn
Plot Date: 12/10/2021
Plot Location:



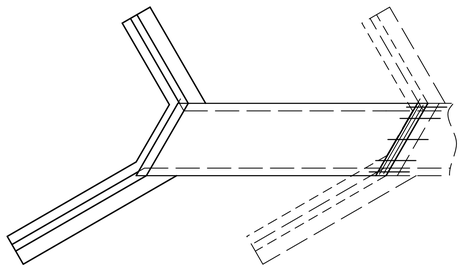
TYPICAL SECTION
(Flared Wings)



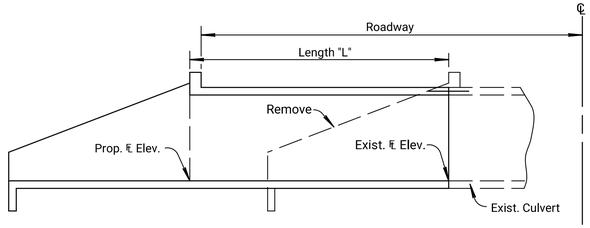
TYPICAL SECTION
(Skewed Structure)



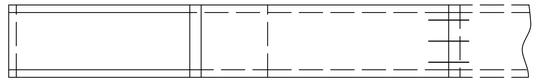
TYPICAL PLAN
(Flared Wings)



TYPICAL PLAN
(Skewed Structure)



TYPICAL SECTION
(Straight Wings)



TYPICAL PLAN
(Straight Wings)

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	24	83

GENERAL NOTE

Dimensions of existing structures shall be checked in the field prior to starting the new construction. Interior walls of multiple box extensions need not be the same thickness as the existing walls.

All existing concrete surfaces adjacent to new concrete shall be thoroughly cleaned by brushing, and soaked with water immediately prior to placing the new concrete.

All work and material necessary for installing the dowel bars shall be subsidiary to the bid item "Reinforcing Steel".

Grouting of bars shall meet the Standard Specifications of the Kansas Department of Transportation. Locate dowel bars near the center of walls and slabs.

For non-skewed boxes "s_1" and "f_1" bars shall be placed at ½ normal spacing for the first 18".

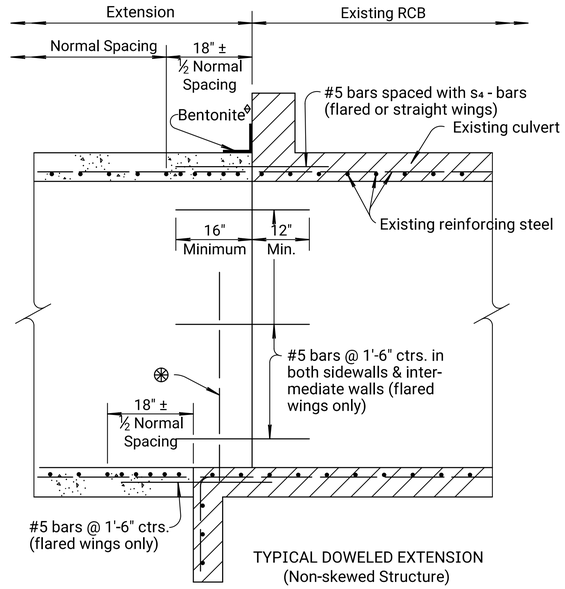
Straight Wing Extensions

Remove existing wings and wing aprons. Remove top of hubguard if necessary to clear new construction. A minimum of 24" length of the existing wing and floor steel shall be left intact and shall be cleaned and straightened to bond into the new concrete. Dowels (#5 deformed bars) shall be inserted across the top of box as shown in sketch. Butt extensions against existing culvert. This work shall be subsidiary to the bid item "Grade 4.0 Concrete".

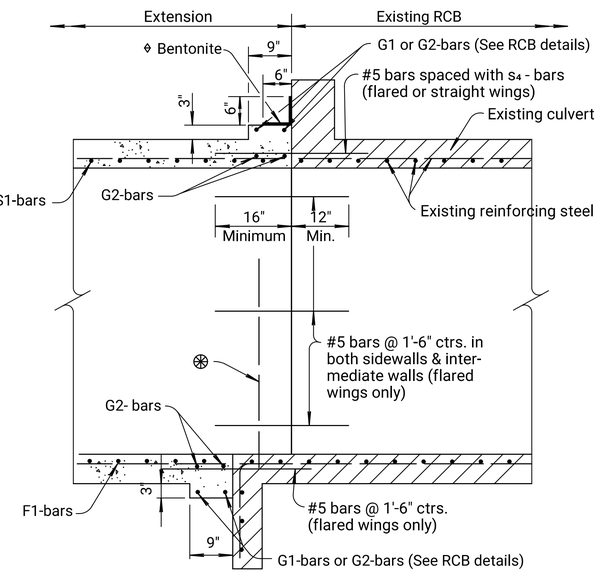
Flared Wing Extensions

Remove top of hubguard, if necessary, to clear new construction. Dowels (#5 deformed bars) shall be inserted in top, bottom, sides and intermediate walls, as shown in sketch. Butt extensions against existing culvert.

If the existing wingwall has an open vertical joint that interferes with the installation of the dowels, remove part of the wingwall to clear construction. This work shall be subsidiary to the bid item "Grade 4.0 Concrete".



TYPICAL DOWELED EXTENSION
(Non-skewed Structure)



TYPICAL DOWELED EXTENSION
(Skewed Structure)

◊ NOTE: The joint between the RCB extension and the existing structure shall be protected by a bentonite based system as shown when the following conditions exist:

1. Fill depth over the joint is 2 feet or less.
2. Lateral location of the joint is 20 feet or less from edge of pavement.
3. RCB span is equal to or greater than 8 feet.

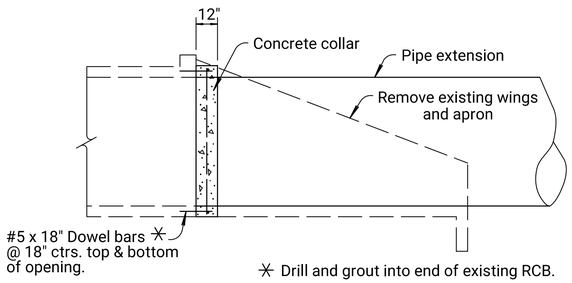
The bentonite shall be placed on the exterior walls and top slab and shall conform with the requirements of the Special Provision for "Bridge Backwall Protection System".

All materials and labor required for this work shall be Subsidiary to the bid item "Grade 4.0 Concrete".

⊛ If the existing footings are left in place, dowel any vertical reinforcing steel located in the new walls into the existing footing. For rigid frame boxes, this may require additional #5 dowel bars to splice to the exterior vertical bars in the wall.

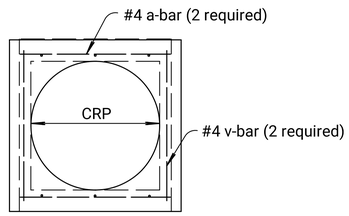
Quantities on this sheet are included in Summary of Quantities, Sh. No. 29

Station	Size Exist. R.C.B.	Roadway Lt.	Roadway Rt.	Length "L" Lt.	Length "L" Rt.	Grade 4.0 Conc. Cu. Yds.	Reinf. Steel Lbs.	Remarks
K-254 Mainline								
358+20.20	7' x 4'		96.06'		11'	10.9	1,340	
N Rock Rd.								
49+00.00	8' x 3'		51.95'		17'	14.0	1,700	
49+00.00	8' x 3'	56.29'		28'		21.0	2615	

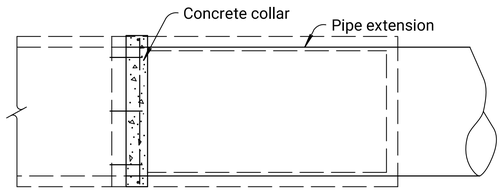


✳ Drill and grout into end of existing RCB.

SIDE VIEW



END VIEW



TOP VIEW

CONSTRUCTION OF COLLAR

NOTE: All Labor, Equipment, Materials, and Incidentals necessary to complete the concrete collar shall not be paid for directly but shall be considered Subsidiary to the individual pipe bid item.

Station	Size Exist. R.C.B.	Size C.R.P. Extension	Ext. Length Lt.	Ext. Length Rt.	End Section Lt.	End Section Rt.

NO.	DATE	REVISIONS	BY	APP'D
8	5-04-05	Class to Grade Conc., notes & details	S.W.K.	J.O.B.
7	4-18-01	Revised General Note	R.J.S.	J.O.B.
6	12-5-00	Rev. General Note flared wing ext.	R.J.S.	J.O.B.
5	12-30-97	Added bentonite system	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL CULVERT EXTENSIONS

RD080

FHWA APPROVAL 6-10-05		APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. Seitz

KDOT Graphics Certified 05-24-2021

KDOT Graphics Certified

Drawn By : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA555401rss080-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	25	83

DATE	BY	
		REFERENCES NOTED
		REFERENCES CHECKED

Scale: 1" = 20'

K–254 (WB)

7 8 9 360 1 2

℄ Proposed Improvements

POT +00.00

PI +17.74

K–254 (EB)

EOP Rt.

Shoulder

Exist A.C.

Vent P.

Vent P.

Woven Wire Fc.

Rock Rd.

Sta. 358+49.79
End Woven Wire Fence Rt.

Sta. 362+27.70
End Woven Wire Fence Rt.

℄

Larry Weis
Lot 1, Block 1
Heritage Hills Estates

LEGEND

- Woven Wire Fence
- (C) Corner Post
- (E) End Post

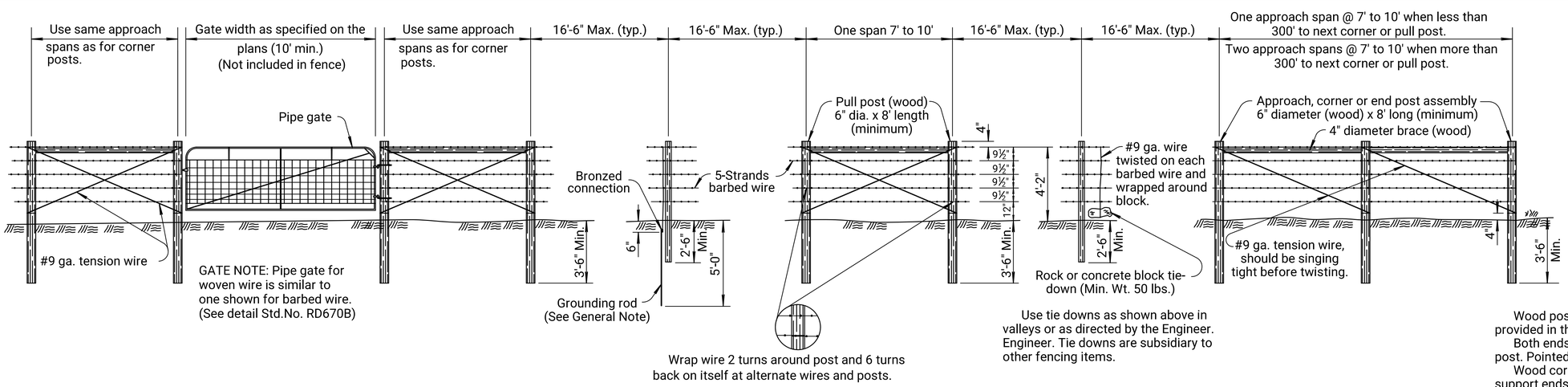
KANSAS DEPARTMENT OF TRANSPORTATION

FENCING PLAN

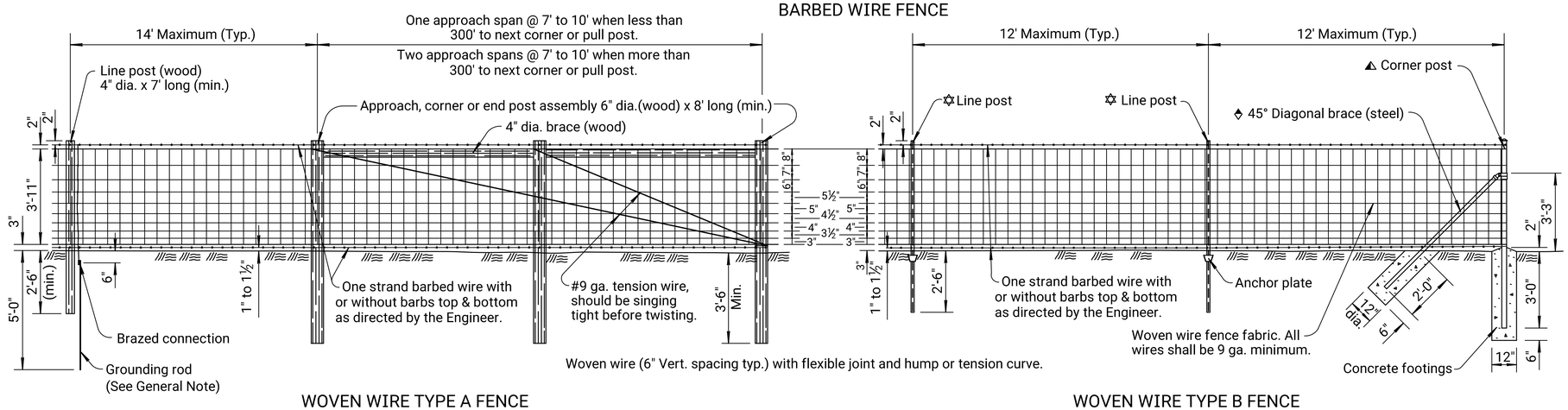
STA. 358+49.79 TO STA. 362+27.70

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipwd\0409707\KA555401rfc-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	26	83



BARBED WIRE FENCE

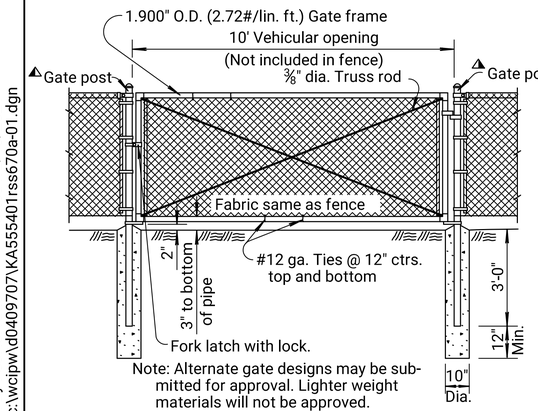


Woven wire (6" Vert. spacing typ.) with flexible joint and hump or tension curve.

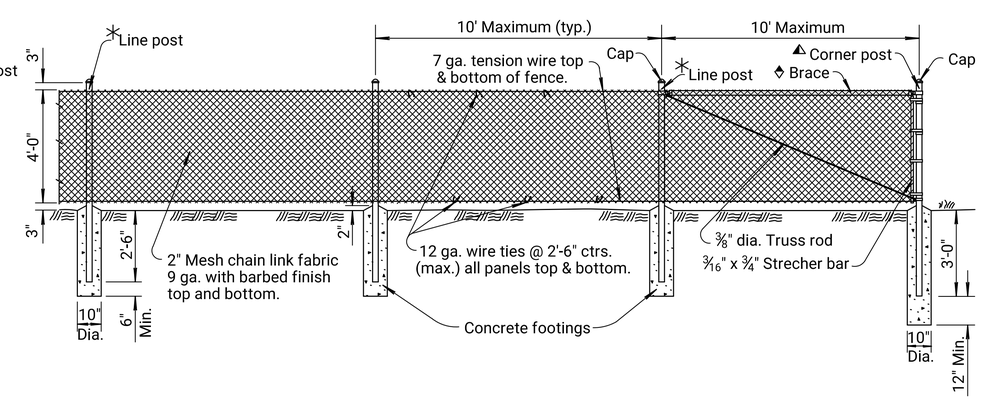
WOVEN WIRE TYPE A FENCE

WOVEN WIRE TYPE B FENCE

Pull post assembly for woven wire with wood posts is similar to barbed wire pull post assembly detail.



DETAIL of GATE, HINGE & SPECIFICATIONS



CHAIN LINK FENCE

(STEEL)

✡ Steel line post 7'-0" length
Studded T (1.33#/lin. ft.)
U (1.33#/lin. ft.)
H (2.27#/lin. ft.)

♦ Brace
1.660" O.D., 0.111" Th. (1.84#/lin. ft.) pipe (Group 1C) or
1.660" O.D., 0.140" Th. (2.27#/lin. ft.) pipe (Group 1A) or
1⅝"x1¼" Brace rail (See Alt. Details)

✳ Line post 7'-0" length.
2.375" O.D., 0.154" Th. (3.65#/lin. ft.) pipe (Group 1A) or
2.375" O.D., 0.130" Th. (3.12#/lin. ft.) pipe (Group 1C) or
1⅝"x1⅞" C Post (2.283/lin. ft.)

◭ End, corner, gate, or pull post 7'-6" length.
(A120) 2.875" O.D., 0.203" Th. (5.79#/lin. ft.) pipe (Group 1A)
or 2.875" O.D., 0.160" Th. (4.64#/lin.ft.) pipe (Group 1C)

GENERAL NOTE

Wood posts and braces shall be given a preservative treatment as provided in the KDOT Standard Specifications.

Both ends of all wood posts shall be cut normal to the axis of the post. Pointed posts will not be permitted.

Wood corner, end, pull and approach posts shall be notched to support ends of wood braces. Wood braces shall be toenailed to the posts with 2-10d nails in each end of the brace.

When wood posts are used, both ends of all tension wires shall be wrapped around the posts twice and stapled in place.

When wood posts are used the fence shall be grounded by a ⅝" diameter galvanized or copper coated rod five feet long, driven vertically until the top is six inches below the ground surface. A #6 solid copper conductor shall be securely fastened to each element of the fence by use of clamps or other suitable device. Grounding rod shall be installed at intervals of 175' maximum.

In lieu of using the galvanized or copper coated rod as described above the contractor may, at his option, use a steel line post at intervals not to exceed each eighth post.

The galvanized or copper coated rod shall be used where power lines pass over the fence.

All steel posts, braces, fittings, and gate frames shall be galvanized and/or coated in accordance with the Standard Specifications.

Steel posts shall be provided with fasteners prevent slippage of the wire strands.

Outside diameters shown for tubular steel posts, bracing and gate frames are nominal. Weight tolerances shall be as shown in the KDOT Standard Specifications.

Posts may be set by driving or digging. If by digging, the posts shall be set in the center of the hole and the soil tamped securely on all sides.

Pull post assembly shall be used at sharp breaks in vertical grade or at approximately 330' centers (Woven & Chain link) or 1320' centers (Barbed wire) on straight runs or as directed by the Engineer.

Concrete used in fence installation shall conform to the requirements of the KDOT Standard Specifications.

Woven wire, chain link fabric, barbed wire and tension wire shall be either zinc coated (galvanized) or aluminum coated.

Minimum strength of barbed wire and tension wire shall be as provided in the KDOT Standard Specifications.

Use #9 gauge galvanized staples 1½" to 1¾" long, or #9 guage galvanized Ring-shank staples 1½" to 1¾" long.

Alternate gate designs may be submitted for approval. Lighter weight materials will not be approved.

Padlocks for gates shall be furnished by the State.

No Wood Posts are allowed for new or reconstruction fence installations on the State Highway System. Shop drawings for steel gate post assembly designs are to be submitted to the State Road Office, Bureau of Design for approval prior to construction

NO.	DATE	REVISIONS	BY	APP'D
9	11-30-09	Rev. post listing,wood po. restrict.	S.W.K.	J.O.B.
8	11-08-05	Revised brace dimension	S.W.K.	J.O.B.
7	11-02-04	Added assembly to end post label	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

HIGHWAY FENCE BARBED, WOVEN, & CHAIN LINK

RD670A

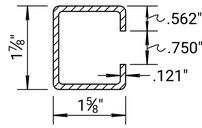
FHWA APPROVAL	12-16-09	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 06-11-2021

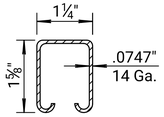
KDOT Graphics Certified

Drawn By : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA555401rss670a-01.dgn

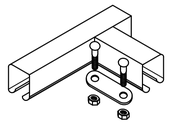
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	27	83



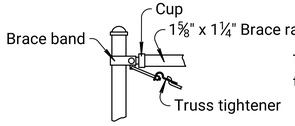
LINE POST (C)
2.28#/Lin. Ft.



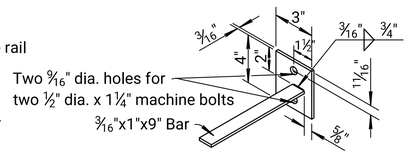
BRACE RAIL SECTION



CORNER CONNECTOR
for BRACE RAILS



BRACE & TRUSS CONNECTION
at BRACE POST



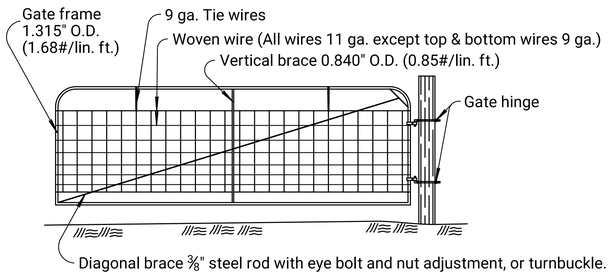
END POST TORQUE BAR

ALTERNATE CHAIN LINK DETAILS

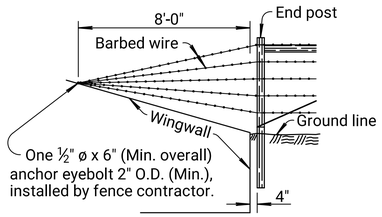
GENERAL NOTE

A line post shall be used in the KDOT fence at each private cross fence, and the contractor shall make a temporary connection. This work shall be subsidiary to other bid items.

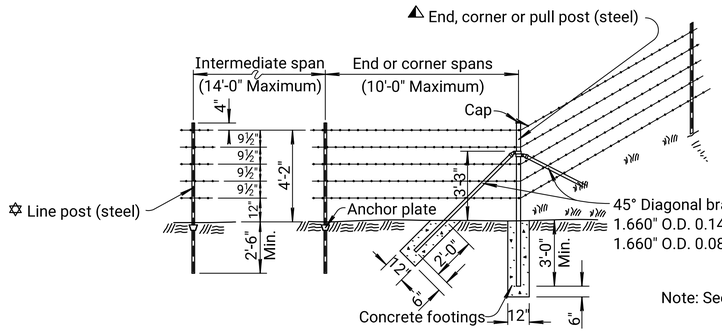
In general, where needed, use small channel crossing as shown, Type I and Type II Floodgates will be used very seldom.



DETAIL of GATE, HINGE & SPECIFICATIONS
(for Barbed & Woven Fence)

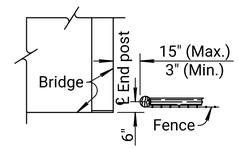


FENCE DETAILS
AT DRAINAGE STRUCTURES
(Type A, B, or Barbed wire fence.)

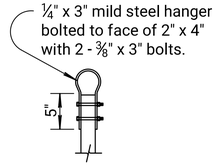


BARBED WIRE FENCE
STEEL POST (ALTERNATE)
Steel posts may be used in lieu of wood posts as shown above.

Note: See Standard Drawing RD670A for steel post requirements.

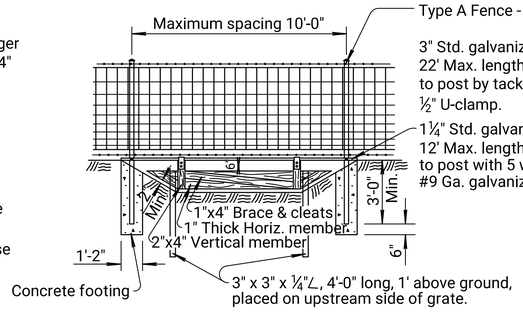


FENCE DETAILS
AT BRIDGE ABUTMENTS
(Use appropriate post and brace for fence type, dimensions are common for all fence types.)

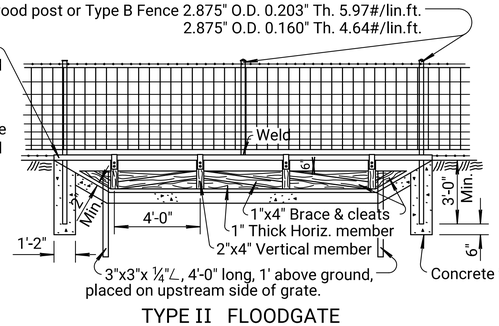


Type I bend hanger for loose fit on 1¼" dia. std. galv. pipe.
Type II bend hanger for loose fit on 3" dia. std. galv. pipe.

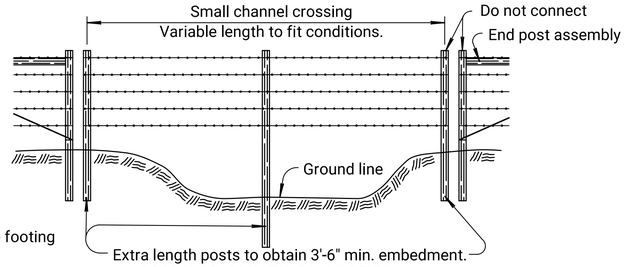
FLOODGATE
HANGER DETAIL



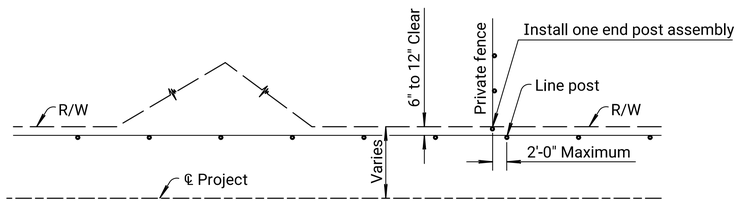
TYPE I FLOODGATE



TYPE II FLOODGATE
(Grouted stone or concrete lined ditch.)

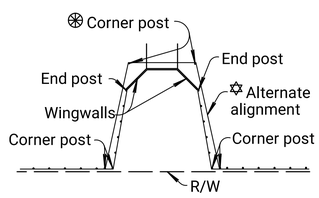


SMALL CHANNEL CROSSING
The above sketch is typical only and can be varied to fit existing conditions. Small channel crossings shall be included in lin. ft. of fence. All extra materials and labor within the small channel crossing shall be subsidiary to lin. ft. of fence.



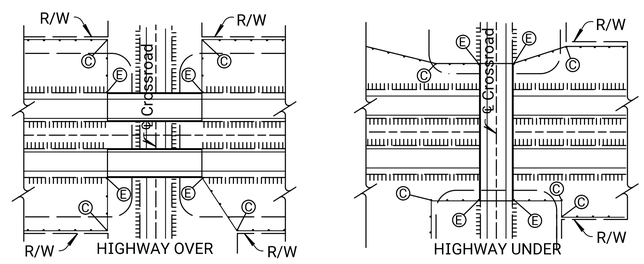
TYPICAL INSTALLATION DIAGRAM

Note: Right of Way fence shall generally be set parallel to and 6" to 12" clear from the Right of Way line.
The alignment layouts as shown are typical, but are not representative of all situations that may occur. Construction may be varied, as required to meet field conditions and/or as directed by the Engineer.
The access control fence shall be attached to the private fence end post assembly using leader wires or staples.



FENCE ALIGNMENT
AT UNDERPASS OR
BOX DRAINAGE STRUCTURE

✡ Alternate alignment may be used at deep under-fill culverts, as directed by the Engineer.



FENCE ALIGNMENT AT BRIDGE ABUTMENTS

✣ Where fence installation over a drainage structure is located within the clear zone, horizontal bracing at the corner posts will not be permitted. An alternate design utilizing diagonal bracing shall be provided.

NO.	DATE	REVISIONS	BY	APP'D
7	7-28-09	Revised Steel size listing	S.W.K.	J.O.B.
6	11-02-04	Revised General Note	S.W.K.	J.O.B.
5	5-30-02	Removed KDOT ownership sign.	S.W.K.	J.O.B.
4	12-30-97	Connect to Private Fence End Post	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

INSTALLATION DETAILS
BARBED, WOVEN, & CHAIN LINK

RD670B

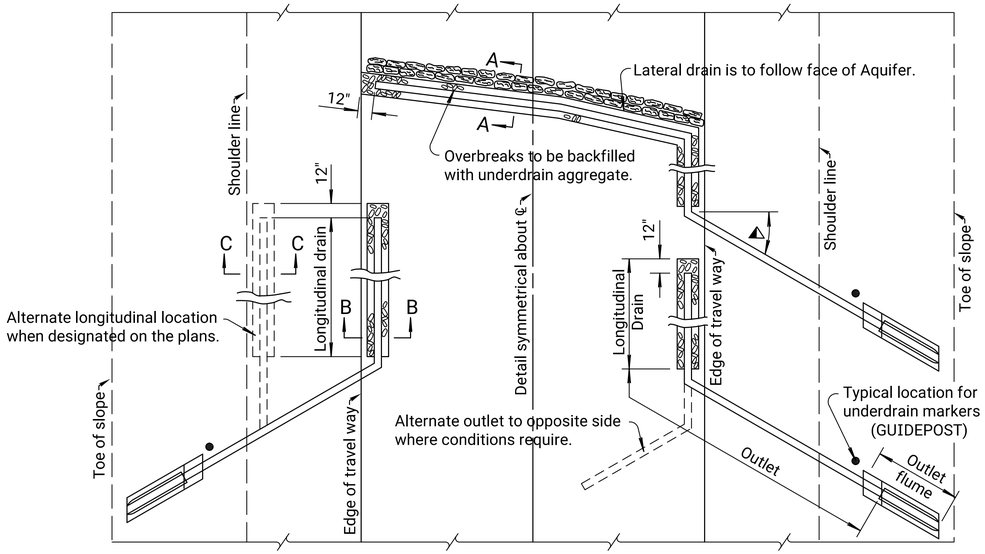
FHWA APPROVAL	12-16-09	APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

Drawn By : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA555401rss670b-01.dgn

KDOT Graphics Certified

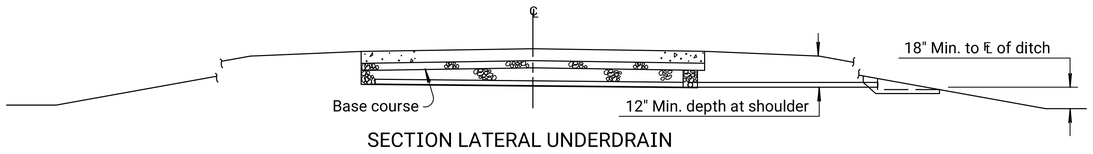
Note to Designer: For required pipe stiffness see KDOT Geology Report.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	28	83

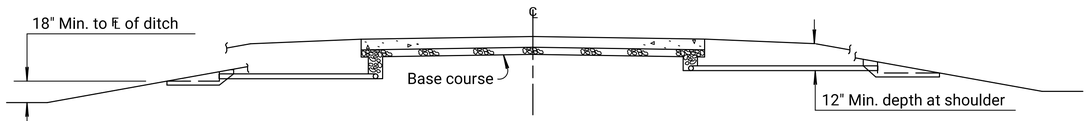


PLAN PIPE UNDERDRAINS

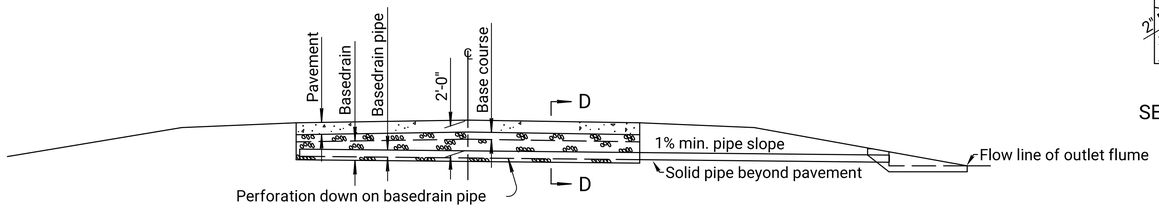
△ 30° unless otherwise specified.



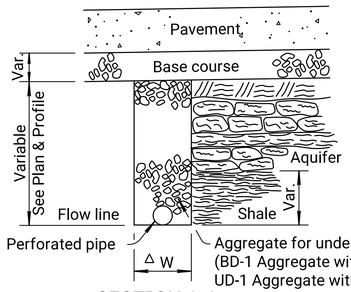
SECTION LATERAL UNDERDRAIN



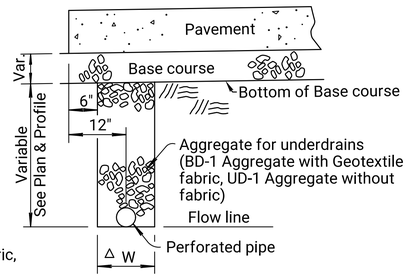
SECTION PIPE UNDERDRAINS



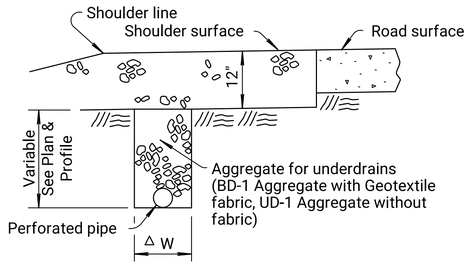
SECTION PIPE BASEDRAINS



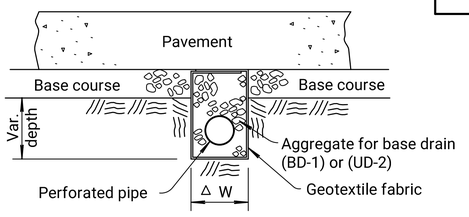
SECTION A-A



SECTION B-B



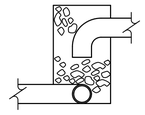
SECTION C-C



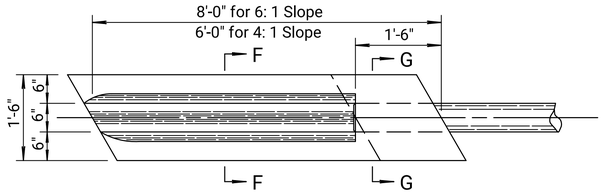
SECTION D-D (BASEDRAIN)

△ "W" should be 8" plus exterior diameter of the pipe used.

Note: Dirt unavoidably mixed with aggregate at subgrade elevation is not detrimental.



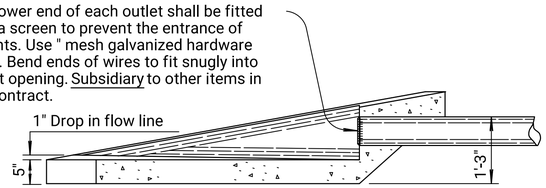
Note: Unless shown otherwise on the plans, 90° elbows shall be used on the longitudinal at all locations where there is a difference in elevation between the longitudinal drain at a lateral trench.



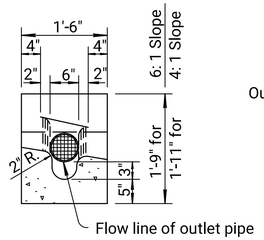
PLAN

Note: Drawing is dimensional for 6" outlet pipe. Adjust dimensions as required for other pipe sizes.

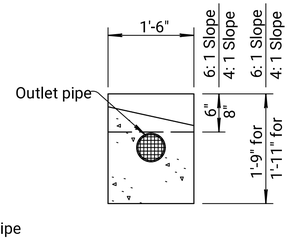
The lower end of each outlet shall be fitted with a screen to prevent the entrance of rodents. Use " mesh galvanized hardware cloth. Bend ends of wires to fit snugly into outlet opening. Subsidiary to other items in the contract.



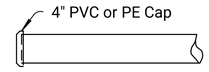
LONGITUDINAL SECTION
CONCRETE OUTLET FLUME



SECTION F-F



SECTION G-G



TYPICAL CAP

GENERAL NOTE

Locations for all underdrains and basedrains as shown on the plans are approximate and the exact locations shall be determined at the time of construction by the Engineer and the Geologist.

All pipe fittings are included in the length shown for Pipe Underdrains and Basedrains.

Flumes shall be constructed at the end of all outlet pipes and shall be Concrete Grade 3.0. At the Contractor's option, Concrete Grade 3.0 (AE) may be used. This flume shall be considered subsidiary to the bid item "Pipe Underdrains".

Outlet pipe shall be either Type G or K with water tight joints. Perforated pipe shall be either Type F, H, J or T and shall be installed with perforations turned to the bottom of the trench. For pipe and outlet pipe pairings, see the KDOT Standard Specifications. Use of Geotextile fabric for underdrains and pipe size is from the Geologist recommendation.

Minimum depth of perforated pipe below pavement depends on pipe type. For details see the KDOT Standard Specifications.

Width, "W", is 8" plus the exterior diameter of the underdrain/base drain pipe unless shown otherwise.

All pipe shall be laid on a minimum grade of 1% unless shown otherwise.

Where the actual elevation of the stratigraphy is found to vary from plan elevation, The stratigraphy shall govern in the installation of underdrains.

Do not grade or backfill outlet pipe with aggregate or sand, use impervious material with standard compaction.

Underdrain/basedrain trench should be located 7.5' from contraction joint (center of slab).

Underdrain should be in place prior to placing base course. Basedrains are trenched and placed after base course is placed.

GENERAL NOTE GUIDEPOST

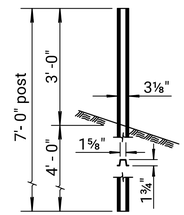
All wood posts shall be given a preservative treatment as provided for in the KDOT Standard Specifications. All cuts and injuries in treated posts shall be thoroughly saturated with preservative.

Reflectorized material shall be applied to the post by the state.

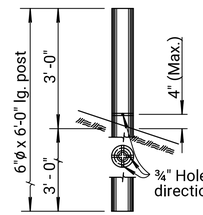
Where wood guidepost is used as underdrain markers, the top 18" of the post shall be given 2 coats of aluminum paint and the top 12" of the post shall be given one coat of International Orange enamel paint.

Only one type of preservative treatment may be used on a project.

Metal post shall have a galvanized or baked enamel coating, and the upper 12" of each post shall receive a coat of International Orange enamel paint.



Metal Guidepost Option
(7'-0" at 3.00 lbs./ft.)
Flanged channel



Wood Guidepost Option
(6" ø x 6'-0")

GUIDEPOST

NO.	DATE	REVISIONS	BY	APP'D
4	11-13-17	Added pipe types, revised notes	A.L.R.	S.W.K.
3	3-27-08	Added Basedrains, revised notes	S.W.K.	J.O.B.
2	1-28-05	Class to Grade conc., guidepost note	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

UNDERDRAINS, BASEDRAINS AND GUIDEPOSTS

~~RD650~~

FHWA APPROVAL	3-5-18	APP'D. Scott W. King	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. King

KDOT Graphics Certified 23 Mar 21

KDOT Graphics Certified

Drawn By : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA555401rss650-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	29	83

EARTHWORK

Station to Station	Excavation						Compaction		Thru Cuts Not Subgraded		Salvaged Topsoil	Waste ◔	Remarks
	Common		Contr. Furn.		Rock (Pavement Removal) ◔		Type A MR 5-5	Type AA MR 5-5	Common Excav.	Type AA MR 5-5	Common	Common	
	Cu. Yds.	VMF	Cu. Yds.	VMF	Cu. Yds.	VMF	Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Sq. Yds.	Cu. Yds.	
K-254 Eastbound													
353+00.00 to 363+69.62	1,951	0.78		0.78	434	1.00	1,436	75	177	177	2,186	14	
K-254 Westbound													
357+50.00 to 373+00.00	1,132	0.78		0.78	483	1.00	631	60	184	184	2,539	245	
Totals	3,083				917		2,067	135	361	361	4,725	259	

◔ To be wasted on sites provided by the Contractor (See General Note).

REMOVAL OF EXISTING STRUCTURES*

Station to Station	Item	Units	Quantity
K-254			
362+70.00	Wingwalls		
363+37.00	Wingwalls		
363+86.00 to 372+40.00	Edge Drains	Lin. Ft.	854
358+50.00 to 359+06.00	Rip Rap		
359+94.00 to 361+49.00	Rip Rap		
363+86.00 to 365+14.00	Rip Rap		

*The listing shown may not be complete and is for information only. Additional structures not listed, but whose removal is required during construction as determined by the engineer, will not be paid for directly, but will be subsidiary to the bid items, "Removal of Existing Structures".

DRAINAGE STRUCTURES

Station	Side	Size	Type	Gr. 4.0 Conc. (Cu. Yds.)	Gr. 4.0 (AE) Conc. (Cu. Yds.)	Reinf. Steel (Gr. 60) (Lbs.)	Reinf. Steel (Gr. 60) (Epoxy Coated) (Lbs.)	Foundation Stabilization (Cu. Yds.)	Granular Backfill (Wingwalls) (Cu. Yds.)	Br. Backwall Protection System (Sq. Yds)	Cross Road Pipes		Storm Sewer Pipes		End Sections				Remarks
											RC 15"	RC 24"	RC 15"	RC 24"	RC 15"	RC 24"	Type I	Type IV	
K-254 Mainline																			
358+20.20	Rt.	7' x 4'	RCB Extension (Rt.)	10.9		1,340		4	12	11									Clean Out
364+14.49	Lt.	15"	RCP Extension (Lt.)								8				1		1		Clean Out
370+67.23	Lt.	15"	RCP Extension (Lt.)								4				1		1		Clean Out
N Rock Rd																			
48+77.36	Rt.	24"	Storm Sewer (Rt.)											22		1	1		
49+00.00	Rt.	8' x 3'	RCB Extension (Rt.)	14.0		1,700		6	8	20									Clean Out
49+00.00	Lt.	8' x 3'	RCB Extension (Lt.)	21.0		2,480		8	8	33									Clean Out
			Totals	45.9		5,520		18	28	64	12			22	2	1	3		

4" PIPE UNDERDRAINS

Station	Side	Length (Ft.)			Guidepost (Each)	Flume Outlet (For Info. Only)	Remarks
		J, H, T	H, T	G, K			
K-254							
372+40.00	Lt.			23.0	1	1	
	Total			23.0	1	1	

FENCE (WOVEN WIRE)

Station to Station		Side	Length (Ft.)	Posts			Remarks
				Cor.	End	Pull	
K-254							
358+49.79	362+27.70	Rt.	380.6'	1	2		
		Total	380.6'	1	2		

CLEANING OF EXISTING STRUCTURES (FOR INFORMATION ONLY)

Station	Side	Structure	Remarks
K-254			
358+20.20	℄	7' x 4' X 171' RCB	
364+14.49	℄	15" X 86' RCP	
370+67.23	℄	15" X 78' RCP	
Rock Rd.			
49+00.00	℄	8' x 3' X 68' RCB	

RECAPITULATION OF ROAD QUANTITIES

Item	Total	Unit
Cleaning Existing Structures	1	Lump Sum
Contractor Construction Staking	1	Lump Sum
Field Office and Laboratory (Type A)	1	Each
Foundation Stabilization	18	Cu. Yd.
Foundation Stabilization (Set Price)	1	Cu. Yd.
Granular Backfill (Wingwalls)	28	Cu. Yd.
Mobilization	1	Lump Sum
Mobilization (DBE)	1	Lump Sum
Removal of Existing Structures	1	Lump Sum
Concrete For Seal Course (Set Price)	1	Cu. Yd.
Clearing and Grubbing	1	Lump Sum
Common Excavation	3,444	Cu. Yd.
Common Excavation (Contractor Furnished)	0	Cu. Yd.
Rock Excavation	917	Cu. Yd.
Compaction of Earthwork (Type A)(MR-5-5)	2,067	Cu. Yd.
Compaction of Earthwork (Type AA)(MR-5-5)	496	Cu. Yd.
Salvaged Topsoil	4,725	Sq. Yd.
Water (Grading)(Set Price)	1	M Gal.
Concrete (Grade 4.0) (RCB)	45.9	Cu. Yd.
Reinforcing Steel (Grade 60)	5,520	Cu. Yd.
Bridge Backwall Protection System	64	Sq. Yd.
Fence (Woven Wire) (Type A or B)	380.6	Lin. Ft.
Posts (Corner) (Woven Wire Type A or B)	1	Each
Posts (End) (Woven Wire Type A or B)	2	Each
Cross Road Pipe (15")(RCP)	12	Lin. Ft.
End Section (15")(RC)	2	Each
End Section (24")(RC)	1	Each
Storm Sewer (24")(RCP)	22	Lin. Ft.
Temporary Surfacing Material (Aggregate) (Set Price)	1	Cu. Yd.
4" Pipe Underdrain (GK)	23	Lin. Ft.
Guideposts	1	Each
Right Of Way Survey Monument	2	Each

For Surfacing Quantities, See Sh. No. 30
For Temp. Erosion & Pollution Quantities, See Sh. No. 32
For Seeding Quantities, See Sh. No. 42
For Signing Quantities, See Sh. No. 51
For Permanent Pavement Marking Quantities, See Sh. No. 58
For Traffic Control Quantities, See Sh. No. 71

DATE | BY | REFERENCES NOTED | REFERENCES CHECKED

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA5554401rpq-01.dgn

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

GENERAL NOTE:

On surfacing projects, the 6" of Compaction Type AA, shown for the center portion on the roadbed, is for the purpose of restoring the original Compaction Type AA which may have been lost since grading operations. The exact locations of this Compaction Type AA, which will be required, is to be determined by the Engineer at the time of construction. This work shall be paid under the bid item "Compaction of Earthwork (Type AA)(MR-5-5)".

~~Over all structures, unless otherwise directed by the Engineer, where the top of the hubguard is level with or above the finished shoulder grade, the earth cover over the structure slab shall be removed and backfilled with _____ material as directed by the Engineer. The removal of this material will be subsidiary.~~

~~The _____ material used to backfill over the structure shall be paid for at the prices shown in the contract.~~

~~The earth shoulders shall be compacted full depth (Type MR) except, when ordered by the Engineer, the top 3" shall be left uncompacted for seeding.~~

~~All side roads and house entrances shall be surfaced with _____ to the R/W line as indicated on the detail. All side roads and house entrances with existing asphalt surface shall be surfaced with _____ at least to the R/W line or to the end of construction, as directed by the Engineer. Each mailbox turnout (ON PROJECTS WHERE STABILIZED SHOULDERS ARE NOT SPECIFIED) shall be surfaced with _____ to the limits shown on the detail.~~

~~Surfacing material (SA-_____) shall be used for surfacing house entrances and side roads (_____C.Y./SQ. YD.) beyond the limits of the asphalt surface to the limits of construction as determined by the Engineer.~~

~~The thickness of side road and entrance surfacing may be increased to the same thickness as the stabilized shoulder within the approximate limits of the shoulder.~~

On projects which specify both asphalt base and surface course materials, side roads, house entrances and mailbox turnouts may be surfaced with both materials at the contractors option, with the approval of the Engineer.

Quantities for aggregate for shoulders, AS-1, are calculated on the basis of 150 lbs. per cu. ft. Quantities for stabilized base course, AB-3, are calculated on the basis of 1 56 lbs. per cu. ft. Weight/cu. ft. includes moisture allowed by specification.

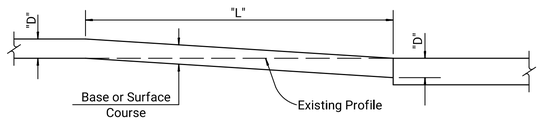
The base course shall be constructed to the plan thickness as shown.

Thicknesses indicated for all construction which is paid for on a weight or volume basis are approximate and may vary to correct for unevenness in the foundations or for other normal unevenness encountered in placement operations.

A tack coat of SS-1HP shall be provided between each lift of all base courses and surface courses and under the first lift of base or surface courses when they are placed on an existing asphalt, brick, or concrete surface, when so ordered by the Engineer and at the rate designated by him. Quantities are included for these tacks calculated at the rate of 0.06 gal. /sq. yd.

Asphalt Material quantities are calculated on the basis of 8.328 lbs. per gal.

Shoulder rumble strips will not be constructed as part of this project.



TYPICAL PROFILE AT GRADE CONTROL POINTS

The Contractor shall cut the subgrade in accordance with this profile at all grade control points, i.e.; existing pavements, grade bridges and R.R. crossings, also at changes in thickness of base or surface courses. Corresponding dimensions of "D" and "L" shall be as given in the table below.

The work of cutting the subgrade and disposing of excess excavated material shall be subsidiary to other items in the contract.

TABLE OF DIMENSIONS												
D	L	D	L	D	L	D	L	D	L	D	L	
1"	25'	3"	75'	5"	125'	7"	175'	9"	225'	11"	275'	
2"	50'	4"	100'	6"	150'	8"	200'	10"	250'	12"	300'	

SUMMARY OF QUANTITIES							
ITEM	WB K-254	EB K-254	N ROCK RD	S ROCK RD		TOTAL	UNIT
HMA Pavemenet (Commercial Grade) (Class A)	1,038.9	1,047.6	455.0	415.5		2,957.0	Tons
Aggregate Base (AB-3) (6")	1,737.0	1,751.5	760.7	694.7		4,943.9	Sq. Yd.
Pavement Edge Wedge (Rock)	113.1	77.3				190.4	Tons
Field Office and Laboratory (Type A)						1.0	Each

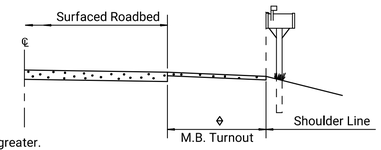
RATES OF APPLICATION				
RATE	UNIT	ITEM		
145.00	lb./Cu. Ft.	All HMA Quantities		
156.00	lb./Cu. Ft.	Aggregate Base		
156.00	lb./Cu. Ft.	Pavement Edge Wedge (Rock)		

† Computed at the rate of

†† Computed at the rate of

RECAPITULATION OF QUANTITIES					
ITEM				TOTAL	UNIT
HMA Pavement (Commercial Grade) (Class A)				2,957	Tons
Aggregate Base (AB-3) (6")				4,944	Sq. Yd.
Pavement Edge Wedge (Rock)				190	Tons
Field Office and Laboratory (Type A)				1	Each
Water (Earthwork Compaction)(Set Price)				1	MGAL
Water (Aggregate Base)(Set Price)				1	MGAL

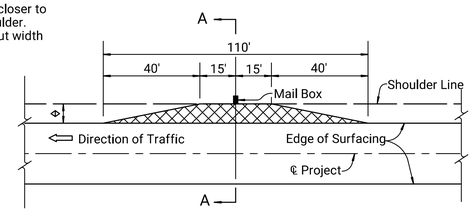
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	30	83



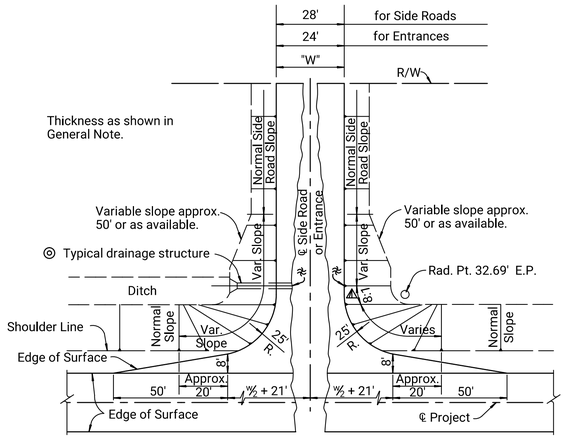
◊ Width shall be 8' or shoulder width, whichever is greater.

SECTION A-A

Note: The face of Mail Box should be no closer to the roadway than the edge of the shoulder. Align with edge of turnout when turnout width is greater than shoulder width.



DETAIL FOR SURFACING OF MAIL BOX TURNOUTS



WITH DRAINAGE STRUCTURE — MOUND ENTRANCE OR SIDE ROAD

DETAIL FOR SURFACING OF SIDE ROADS & HOUSE ENTRANCES

⚠ 8:1 Slope at the appropriate clear zone shall apply to all mound entrances and mound side roads to 10' fill height. Normal Slope (but not steeper than 6:1) for over 10' fill height.

◎ Normal Slope (but not steeper than appropriate clear zone width. 6:1) at approximate ℄ Structure or

✻ On side roads and entrances which slope toward the highway, a low point approx. 6" deep shall be constructed to divert surface drainage into the high-way ditch, unless otherwise shown on the plans.

NO.	DATE	REVISIONS	BY	APP'D
12	1-10-07	Changed bituminous to asphalt	S.W.K.	J.O.B.
11	8-30-06	Changed tack type/rate	S.W.K.	J.O.B.
10	3-24-05	Revised compaction, tack type/rate	S.W.K.	J.O.B.
9	6-12-02	Added low point off shoulder.	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES (Surfacing)

RD051

FHWA APPROVAL 9-06-06		APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. Hecht

KDOT Graphics Certified

Drawn By : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA555401rss051-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	31	83

TABULATION OF SURFACING QUANTITIES

Station to Station		Length (ft.)	Width (ft.)	ǂ11" HMA Commercial Grade (Class A)	6" Aggregate Base (AB-3)	⚹Pavement Edge Wedge (Rock)		Remarks
				(Tons)	(Sq. Yd.)	(Tons)		
K-254 Eastbound								
Rt. Turn Lane								
353+00.00	356+00.00	240.00	Varies	138.3	231.2	25.4		
356+00.00	362+12.12	612.12	13	528.8	884.2	51.9		
Shoulder								
353+00.00	354+06.91	81.78	Varies	59.4	99.3			
354+06.91	362+12.12	770.34	6	321.1	536.8			
Rock Rd. South								
50+53.01	51+42.22	89.21	Varies	415.5	694.7			
K-254 Westbound								
Rt. Turn Lane								
363+95.93	370+00.00	604.06	13.0	521.9	872.5	51.2		
370+00.00	373+00.00	240.00	Varies	134.1	224.3	25.4		
Shoulder								
358+00.00	362+30.13					36.5		
363+95.93	371+67.06	929.96	6.0	307.5	514.1			
371+67.06	373+00.00	39.98	Varies	75.4	126.1			
Rock Rd. North								
48+58.44	49+46.98	88.54	Varies	455.0	760.7			
TOTALS				2,957.0	4,943.9	190.4		

ǂ Computed at the rate of 145 pounds per cubic foot

⚹ Computed at the rate of 156 pounds per cubic foot

DATE	BY	REFERENCES NOTED	REFERENCES CHECKED

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipwd\0409707\KA555401rsq01.dgn

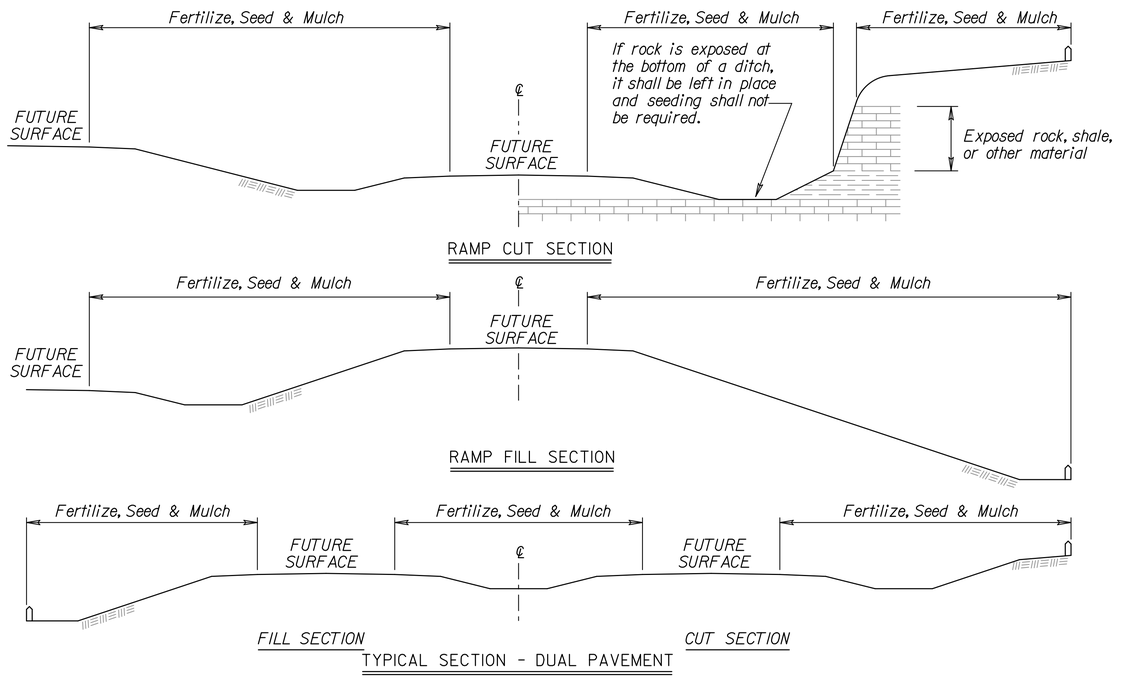
KANSAS DEPARTMENT OF TRANSPORTATION

TABULATION OF
SURFACING OF QUANTITIES

KDOT Graphics Certified 23 Mar 21

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	32	83



FERTILIZER: A ratio and application rate that equals or exceeds the required minimum rate per acre of N, P_2O_5, K_2O listed in Summary of Quantities will be acceptable.

- ** - N = Nitrogen Rate of Application*
- *** - P_2O_5 = Phosphorous Rate of Application*
- **** - K_2O = Potassium Rate of Application*

The Contractor will be required to finish areas of excavation, borrow and embankment in accordance with the specifications. Areas that require installation or construction of temporary water pollution control items will be finished in reasonable close conformity to the alignment, grade and cross section shown on the plans or as established by the Engineer.

CLT = Construction Limit Tract. This area is defined by the entire disturbed area of the project that requires seeding and erosion control measures to be placed. Any impervious areas (i.e. pavement, gravel, riprap, etc.) shall not be included in this measurement.

Slope = Defined by the area of the project that requires Class 1 erosion control material to be placed. This area shall be seeded using the Soil Erosion Mix prior to placement of the material. Drilling seed is preferred, however, broadcasting is acceptable if drilling is not possible.

Channel = Defined by the area of the project that requires Class 2 erosion control material to be placed. This area shall be seeded using the Soil Erosion Mix prior to placement of the material. Drilling seed is preferred, however, broadcasting is acceptable if drilling is not possible.

GENERAL NOTES

The entire disturbed area, excepting the paved or surfaced areas, steep rocky slopes and areas of undisturbed native sod or other desirable vegetation shall be fertilized (limed when required), seeded, and mulched. Soil preparation shall conform to the Standard Specifications.

Temporary seeding shall be done during any time of the year that the soil can be cultivated. After the temporary seeding has been completed on the entire project, permanent seeding shall be done during the normal seeding season.

MULCHING: Mulch shall be spread uniformly over all disturbed areas and punched in the soil, unless otherwise noted on the plans. The rate of application per acre, thickness in place, for the mulching materials is generally as follows:

1¾ - 2¼ Tons per Acre = 1½" loose depth spread uniformly over acre.

Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.
Other vegetative mulches are acceptable only with the Engineer's concurrence.

The above rate is a guide. It will be at the discretion of the Engineer to determine what rate is sufficient for adequate protection of newly seeded areas.

SUMMARY OF SEEDING / EROSION CONTROL QUANTITIES

P.L.S. RATE/ ACRE		ACRES		BID ITEM	QUANTITY	UNIT
CLT	SL/CH	CLT	SL/CH			
80		1.9		Temporary Fertilizer (15 - 30 - 15)	151	LB
20		1.9		Temporary Seed (Canada Wildrye)	38	LB
45		1.9		Temporary Seed (Grain Oats)	85	LB
45		1.9		Temporary Seed (Sterile Wheatgrass)	85	LB
	108.5		0.73	Soil Erosion Mix	79.5	LB
				Erosion Control (Class 1, Type C)	381	SQ YD
				Erosion Control (Class 2, Type C)	3,173	SQ YD
				Sediment Removal (Set Price)	1	CU YD
				Synthetic Sediment Barrier		LF
				Temporary Berm (Set Price)	1	LF
				Temporary Ditch Check (Rock)		LF
				Temporary Inlet Sediment Barrier		EACH
				Temporary Sediment Basin		CU YD
				Temporary Slope Drain		LF
				Temporary Stream Crossing		EACH
				Biodegradable Log (9")	15	LF
				Biodegradable Log (12")	20	LF
				Biodegradable Log (20")	170	LF
				Filter Sock (18")	170	LF
				Geotextile (Erosion Control)		SQ YD
				Silt Fence		LF
				SWPPP Design †	1	LS
				SWPPP Inspection †	20	EACH
				Water Pollution Control Manager †	30	EACH
900 lbs / acre		1.2		Mulch Tacking Slurry	1,044	LB
2 tons / acre		1.2		Mulching	7.88	TON
				Water (Erosion Control) (Set Price)	1	MGAL

NOTE: Projects less than 1 acre shall be bid as "Seeding" by the lump sum. See Permanent Seeding Summary of Seeding Quantities sheet LA850 for further details.

Geotextile (Erosion Control) shall be removed prior to placement of permanent slope protection.

Regreen and Quick Guard are the approved sterile wheatgrass products.

† If the total disturbed area of the project, not just the seeding area, is 1 acre or more, then these bid items must be included.

***** List size of material.*

The amount of mulch and mulch tacking slurry in the bid quantities is estimated. (Acres of Seeding X 1.5 X 2 Tons/Acre). The estimated quantity includes mulching associated with both temporary and permanent seeding operations. The total mulch and mulch tacking slurry required shall be determined in the field. The bid item for mulching and mulch tacking slurry shall be paid for according to the Standard Specifications.

Quantities for all erosion control items are estimated to give full flexibility for compliance with the NPDES permit. Final quantities will be determined in the field.

SOIL EROSION MIX

PLS RATE	NAME	QTY (lb)
0.5	Seed (Blue Grama Grass) (Lovington)	0.4
4.5	Seed (Buffalograss) (Treated)	3.3
45	Seed (Perennial Ryegrass)	33.0
0.5	Seed (Sand Dropseed Grass)	0.4
7	Seed (Side Oats Grama Grass) (El Reno)	5.1
45	Seed (Tall Fescue) (Endophyte Free)	33.0
6	Seed (Western Wheatgrass) (Barton)	4.4
108.5	Total (lb)	79.5

The Soil Erosion Mix is to be placed under the Class 1 and/or Class 2 erosion control material.

The Soil Erosion Mix consists of the Shoulder Area of the Permanent Seed Mix used on the project.

NO.	DATE	REVISIONS	BY	APP'D
3	08/03/20	Added Note	MRD	ML
2	12/01/17	Revised Standard	MRD	SHS
1	06/01/17	Revised Standard	MRD	SHS

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL

LA852A

FHWA APPROVAL		1/26/2018	APP'D		Scott H. Shields
DESIGNED	MRD	DETAILED	MRD	QUANTITIES	CADD
DESIGN CK.	SHS	DETAIL CK.	SHS	QUAN.CK.	CADD CK.

Std. Base File:	
Plotted By: SJHarvdic	Plot Location:
File: c:\wcipw\d0409707\KA555401\ee852a-01.dgn	
Plot Date: 12/10/2021	

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	33	83

EROSION CONTROL- CLASS I, TYPE C

STATION	TO STATION	SIDE	LENGTH	WIDTH	SQ YARD
357+95.96	358+44.25	RT	48.29	20.94	112
358+00.00	358+44.09	LT	44.08	22.31	109
362+39.54	362+62.21	LT	22.67	19.28	49
362+62.34	362+73.30	LT	10.96	5.00	6
363+44.23	363+85.42	LT	41.19	20.31	93
364+09.42	364+19.48	LT	10.06	5.00	6
370+62.26	370+72.25	LT	9.99	5.00	6
TOTAL EROSION CONTROL (CLASS I, TYPE C) =					381

EROSION CONTROL- CLASS II, TYPE G

STATION	TO STATION	SIDE	LENGTH	WIDTH	SQ YARD
354+50.00	358+10.00	RT	360.00	22.40	896
358+30.00	362+31.00	RT	401.00	22.40	998
358+05.10	362+52.94	LT	447.84	18.90	940
363+63.60	365+00.00	LT	136.40	22.40	339
TOTAL EROSION CONTROL (CLASS II, TYPE G) =					3,173

Std. Base File:	
Plotted By: SJHarvatic	Plot Location:
File: c:\wo\pw\d0409707\KA555401eac852a-ec-01.dgn	
Plot Date: 12/10/2021	

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

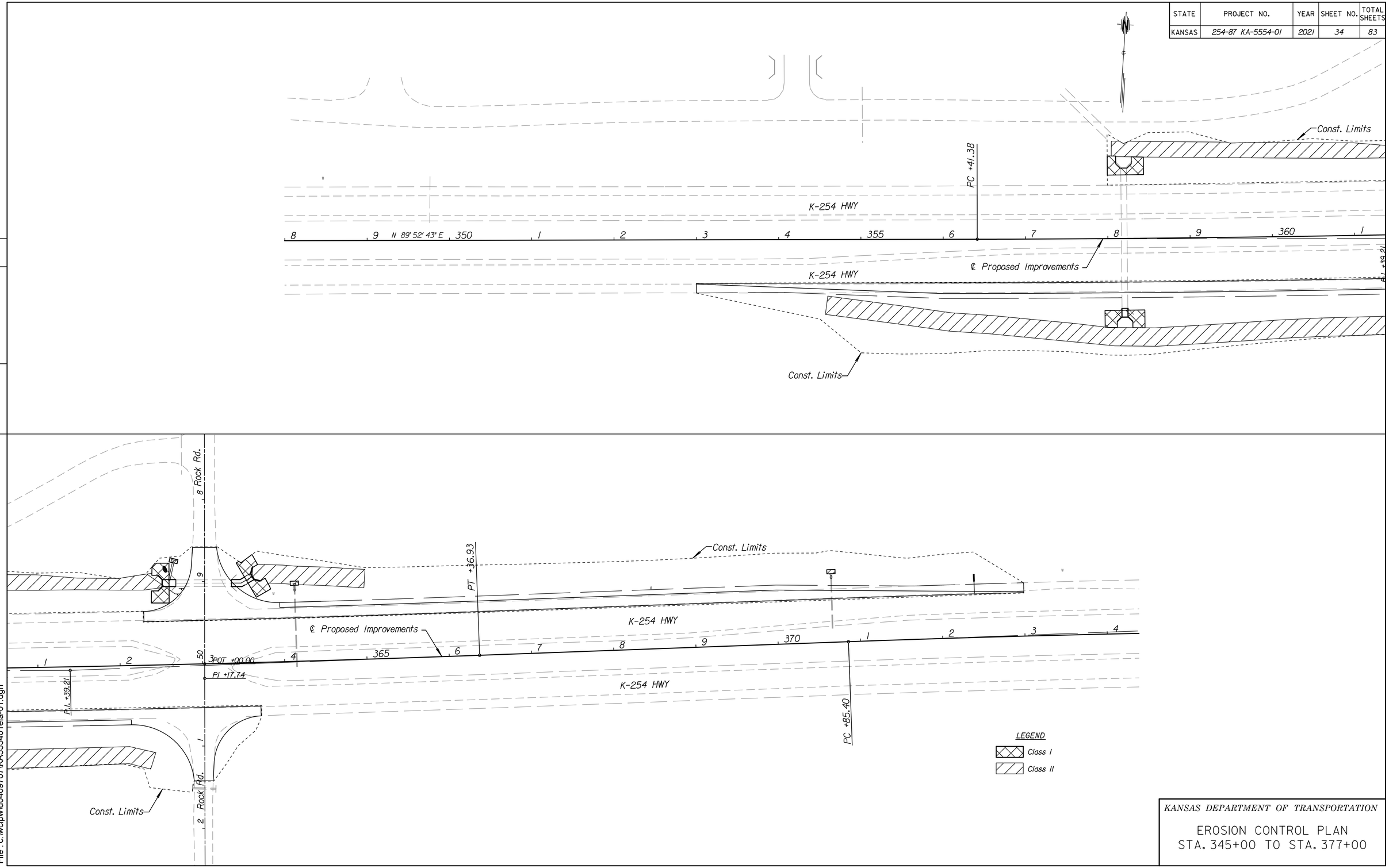
EROSION CONTROL
SEEDING-SODDING

LA852A-EC

FHWA APPROVAL		1/04/2006	APP'D	Scott H. Shields	
DESIGNED	MRM	DETAILED	MRM	QUANTITIES	CADD MRM
DESIGN CK.	SHS	DETAIL CK.	SHS	QUAN.CK.	CADD CK. SHS

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	34	83

DATE	BY	REFERENCES NOTED
		REFERENCES CHECKED

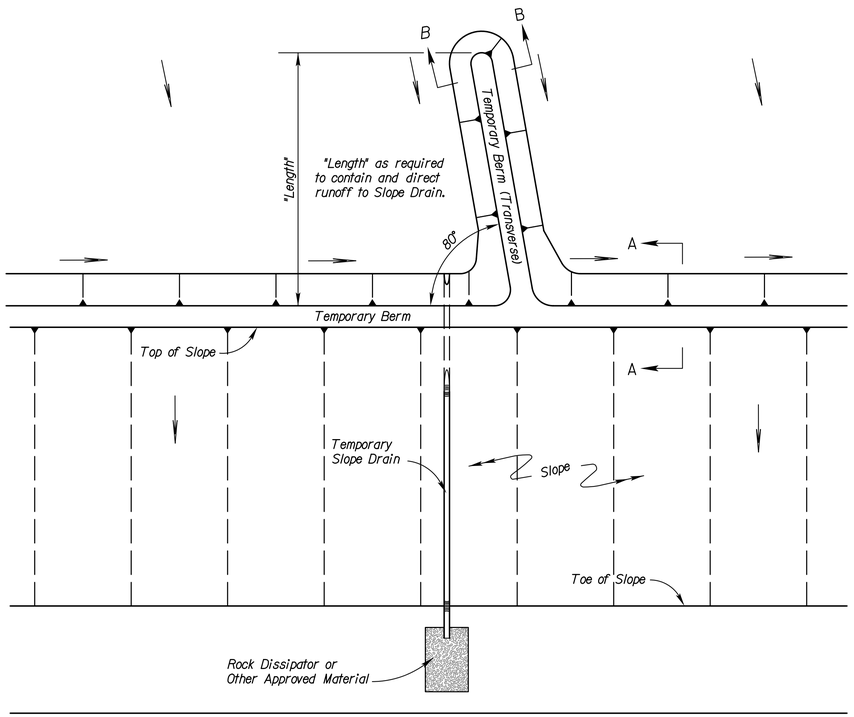


Drawn By : SJHorvatic
File : c:\wcipwld0409707\KA555401ella-01.dgn
Plotted : 12/10/2021

KANSAS DEPARTMENT OF TRANSPORTATION

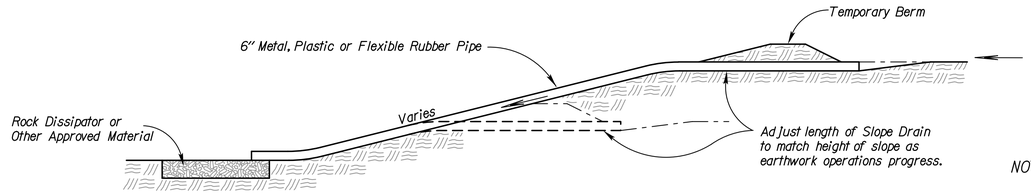
EROSION CONTROL PLAN
STA. 345+00 TO STA. 377+00

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	35	83



TYPICAL PLAN VIEW OF TEMPORARY BERM AND TEMPORARY SLOPE DRAIN

NO SCALE



TYPICAL PROFILE OF TEMPORARY SLOPE DRAIN

NO SCALE

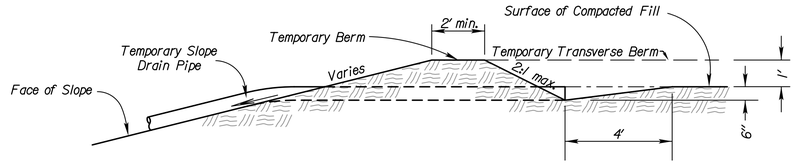
NOTES:

1) Temporary Slope Drain and Temporary Berm may be used on either project foreslopes or project backslopes.

2) Discharge of Slope Drains shall be into stabilized ditch or area, or into Sediment Basin.

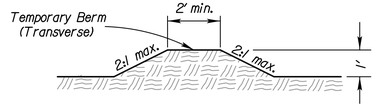
3) Pipe shall be secured in place as approved by Engineer.

4) Temporary Berms under 2,000 feet shall be bid by Set Price.



SECTION A-A

NO SCALE

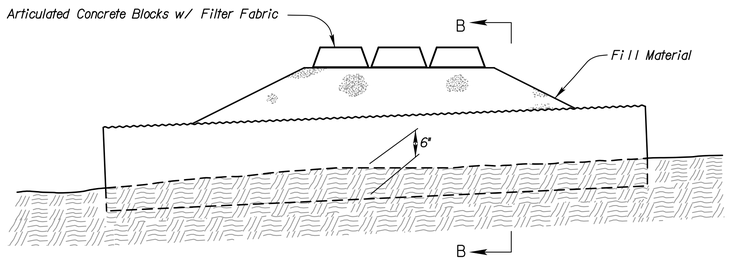


SECTION B-B

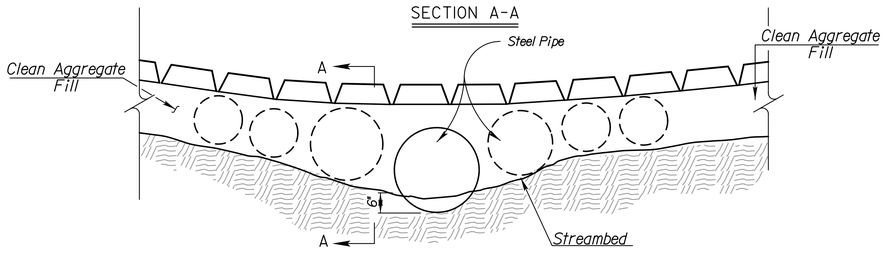
NO SCALE

TYPICAL PROFILE OF TEMPORARY BERM

NO SCALE



SECTION A-A



SECTION B-B

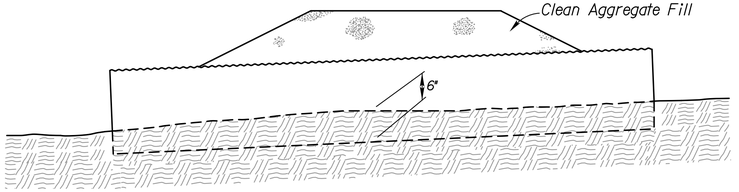
TEMPORARY STREAM CROSSING (ARTICULATED CONCRETE BLOCKS)

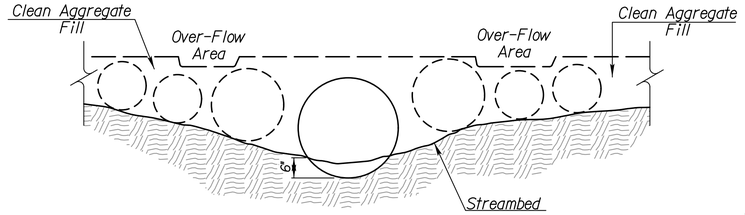
NO SCALE

Pipe size may vary

Place 1 pipe buried 6" into stream bottom, in the lowest point of the channel to allow the passage of aquatic organisms, with additional pipes placed along the remainder of the stream channel bottom such that ordinary high water (OHW) flows designated in the Contract Documents shall flow through the pipes without overtopping the crossing.

See KDOT Specifications for more information





SECTION B-B

TEMPORARY STREAM CROSSING (AGGREGATE)

NO SCALE

Pipe size may vary

Place 1 pipe buried 6" into stream bottom, in the lowest point of the channel to allow the passage of aquatic organisms, with additional pipes placed along the remainder of the stream channel bottom such that ordinary high water (OHW) flows designated in the Contract Documents shall flow through the pipes without overtopping the crossing.

See KDOT Specifications for more information

NO.	DATE	REVISIONS	BY	APP'D
3	6/11/13	Revised Standard	MRM	SHS
2	11/01/10	Revised Standard	MRM	SHS
1	10/15/10	Revised Standard	WCL	RDR

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL

TEMPORARY SLOPE DRAIN

TEMPORARY STREAM CROSSING (AGGREGATE)

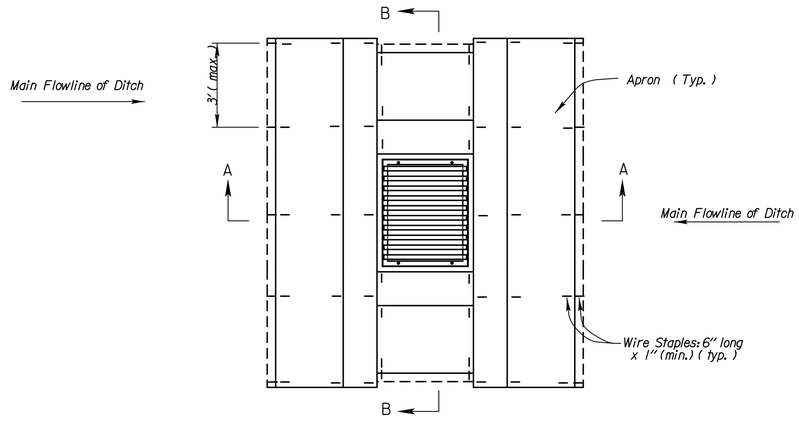
TEMP. STREAM CROSS. (ARTC. CONC. BLOCKS)

LA852B

FHWA APPROVAL	11/08/2010	APP'D	Scott H. Shields
DESIGNED MRM	DETAILED	QUANTITIES	CADD
DESIGN CK. SHS	DETAIL CK.	QUAN.CK.	CADD CK.

Std. Base File:
Plotted By: SJHarvatic | Plot Location:
File: c:\wo\pw\d0409707\KA5554\01ec852b-01.dgn
Plot Date: 12/10/2021

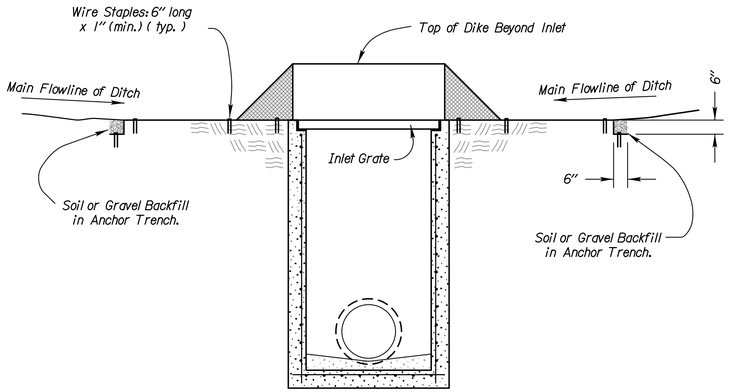
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	36	83



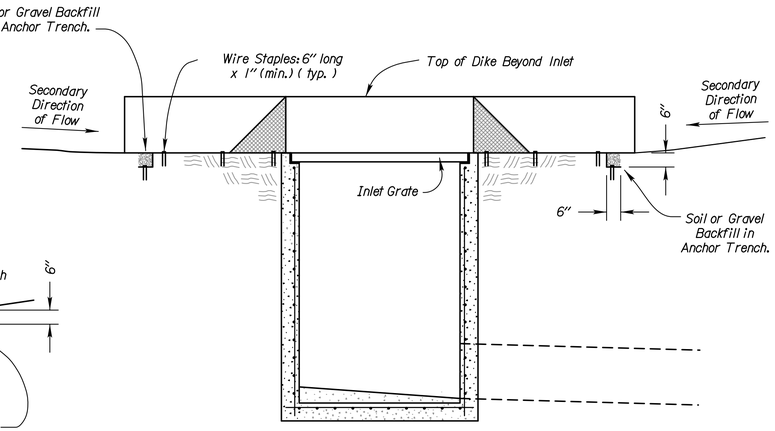
PLAN

TEMPORARY INLET SEDIMENT BARRIER
(TRIANGULAR SILT DIKE METHOD)

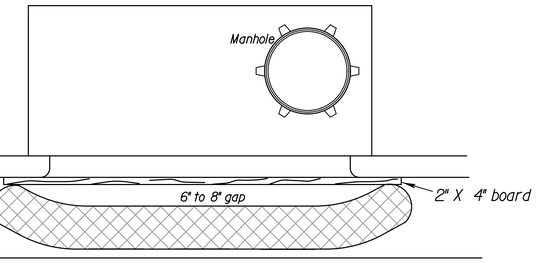
NO SCALE



SECTION A - A



SECTION B - B

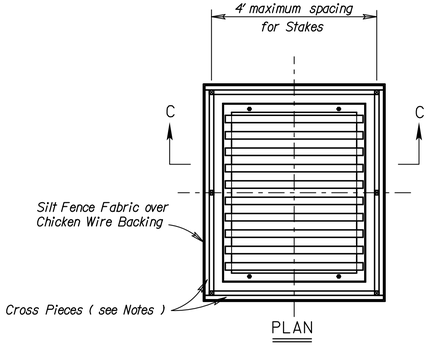


Bags = synthetic net (3mm mesh) or burlap bags

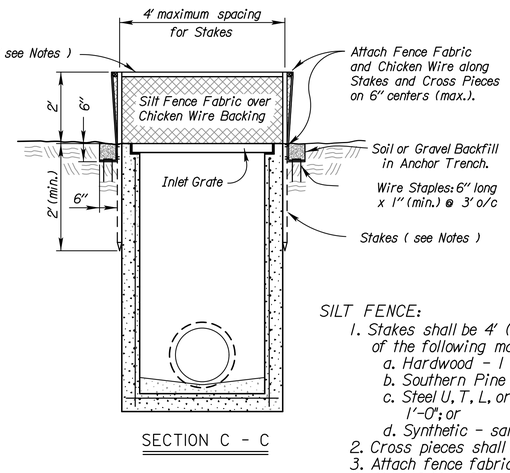
Rock = approximately 1" to 2" diameter

CURB INLET PROTECTION

1. If multiple gravel bags are required, place them in such a way that no gaps are evident.
2. Height of bags (8" minimum diameter) must not be above top of curb.
3. Alternative products may be used other than gravel bags such as the "Gutter Buddy". Products must be approved by the Engineer.
4. Curb inlet protection will be measured and paid for as Filter Sock.



PLAN



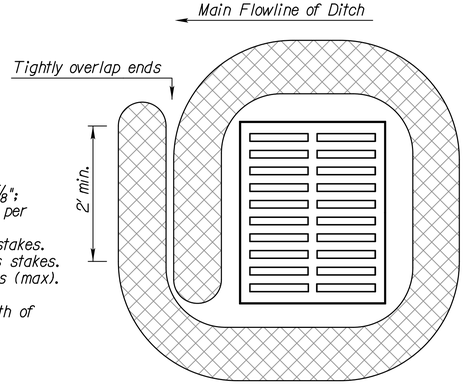
SECTION C - C

TEMPORARY INLET SEDIMENT BARRIER
(SILT FENCE METHOD)

NO SCALE

SILT FENCE:

1. Stakes shall be 4' (min.) long and of one of the following materials:
   a. Hardwood - 1 3/16" x 1 3/16";
   b. Southern Pine (No. 2) - 2 5/8" x 2 5/8";
   c. Steel U, T, L, or C Section - .95 lbs. per 1'-0"; or
   d. Synthetic - same strength as wood stakes.
2. Cross pieces shall be of same material as stakes.
3. Attach fence fabric securely on 6" centers (max).
4. Use of high flow material is acceptable.
5. Refer to plan sheets to estimate the length of silt fence required.



Note: 25% of log shall be keyed into ground during installation.

Stake every 4'

Drop inlet use
1'-6" TO 1'-8" diameter log

BIODEGRADABLE LOG/FILTER SOCK
DROP INLET PROTECTION

Material Requirements
Use 100% shredded mulch or other non-compost biodegradable material as fill for logs.
No compost or fines.
No hay or straw.
Do not use material which prohibits water infiltration.
Log Mesh: Use mesh with 1/4" openings or larger. Mesh must allow water infiltration but also hold fill material in place.

NO.	DATE	REVISIONS	BY	APP'D
3	9/26/19	Changed Direction of Main Flowline of Ditch Arrow	MRD	SHS
2	3/10/15	Revised Standard	RA	SHS
1	6/01/13	Revised Standard	MRM	SHS

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL

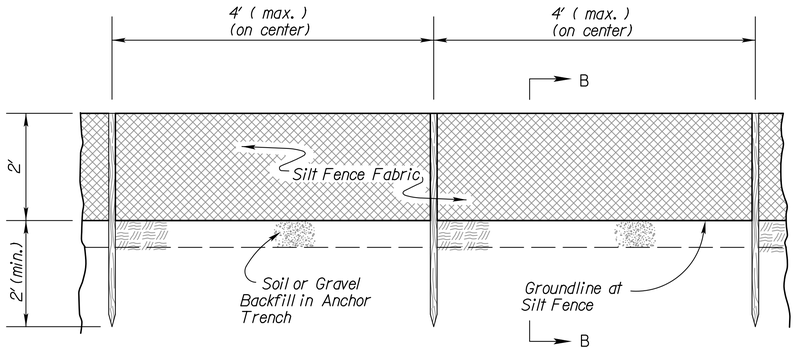
TEMP. INLET SEDIMENT BARRIER (SILT FENCE)
TEMP. INLET SEDIMENT BARRIER (T.S.D.)
CURB INLET PROTECTION
DROP INLET PROTECTION

LA852C

FHWA APPROVAL		3/10/2015	APP'D	Scott H. Shields	
DESIGNED	RA	DETAILED	RA	QUANTITIES	CADD
DESIGN CK.	SHS	DETAIL CK.	SHS	QUAN.CK.	CADD CK.

Std. Base File:
Plotted By: SJHandic | Plot Location:
File: c:\wc\pw\d0409707\KA5554O1ec852c-01.dgn
Plot Date: 12/10/2021

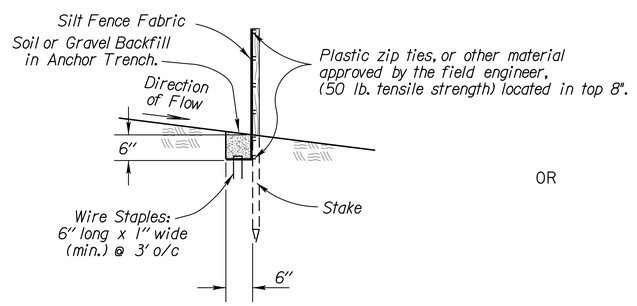
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	37	83



TYPICAL ELEVATION

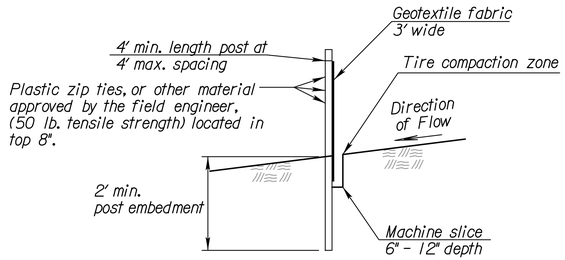
SILT FENCE BARRIER

NO SCALE

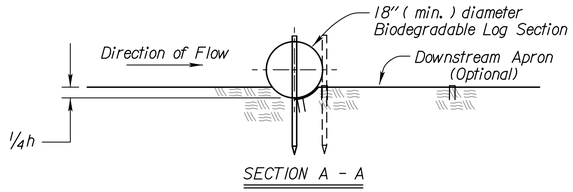


SECTION B-B

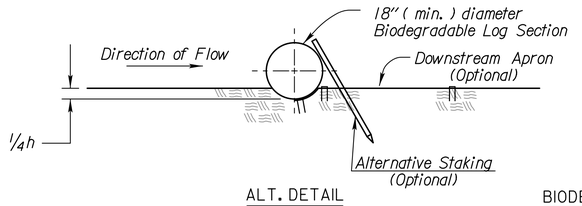
OR



SECTION B-B

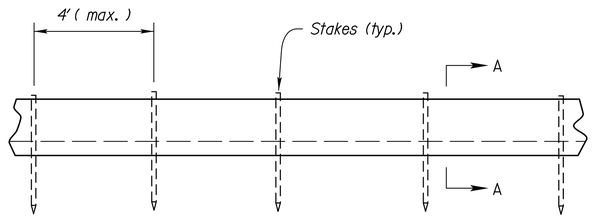


SECTION A - A



ALT. DETAIL

OPTIONAL



TYPICAL ELEVATION

BIODEGRADABLE LOG SLOPE INTERRUPTIONS

OR Filter Sock

INSTALLATION NOTES

SILT FENCE:

1. Stakes shall be 4' (min.) long and of one of the following materials:
   a. Hardwood - 1 3/16" x 1 3/16";
   b. Southern Pine (No. 2) - 2 5/8" x 2 5/8";
   c. Steel U, T, L, or C Section - .95 lbs. per 1'-0"; or
   d. Synthetic - same strength as wood stakes.
2. Attach fence fabric with 3 zip ties within the top 8" of the fence
   Alternate attachment methods may be approved by the Engineer on a performance basis.
3. Use of high flow material is acceptable.
4. Refer to plan sheets to estimate the length of silt fence required.

BIODEGRADABLE LOG OR FILTER SOCK

1. Place biodegradable logs or filter sock tightly together minimum overlap of 18".
2. Wood stakes shall be 2" x 2" (nom.).
3. Refer to plan sheets to estimate length of biodegradable log and filter sock required.
4. Each log or sock (except compost filter socks) should be keyed into the ground at a minimum of 25% of its height. Compost filter socks should be placed on smooth prepared ground with no gaps between the sock and soil.
5. Length of stakes should be 2 times the height of the log at a minimum with minimum ground embedment equal to the height of the log / sock.

Biodegradable Log or Filter Sock Slope Interruptions

Slope Gradient	PRODUCT: 9" Sediment Log or 8" Filter Sock (ft)	12" Sediment Log or 12" Filter Sock (ft)	20" Sediment Log or 18" Filter Sock (ft)
≤4H:1V	40	60	80
3H:1V	30	45	60

Deviations should be approved by the Field Engineer.

	BIODEGRADABLE LOG MATERIAL	
	LOW FLOW	HIGH FLOW
9"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber
12"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber
18"-20"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber

GENERAL NOTES

1) Slope interruptions shall be placed along contour lines, with a short section turned upgrade at each end of the barrier.
2) The maximum length of the slope interruptions shall not exceed 250 feet, and the barrier ends need to be staggered.
3) Interruptions damaged by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired immediately by Contractor at no additional cost to KDOT.
4) Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.

NO.	DATE	REVISIONS	BY	APP'D
3	6/28/16	Revised Standard	RA	SHS
2	3/01/15	Revised Standard	RA	SHS
1	6/01/13	Revised Standard	MRM	SHS

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL

SLOPE INTERRUPTIONS BIODEGRADABLE LOG / SILT FENCE

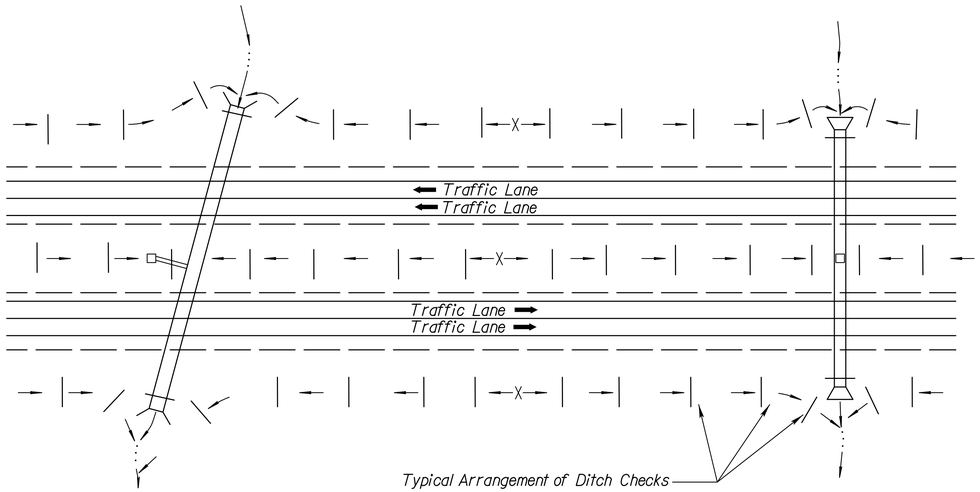
LA852D

FHWA APPROVAL		9/14/2016	APP'D	Scott H. Shields	
DESIGNED	SHS	DETAILED RA	QUANTITIES	CADD	
DESIGN CK.	SHS	DETAIL CK.	QUAN.CK.	CADD CK.	

Std. Base File:
Plotted By: SJHarvdic | Plot Location:
File: c:\wcipw\d0409707\KA555401\ec852d-01.dgn
Plot Date: 12/10/2021

CADconform Certify This File

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	38	83



TYPICAL DITCH CHECK LAYOUT PLAN

NO SCALE

20" BIOLOG CHECK SPACING	
DITCH ℄ SLOPE (%)	SPACING INTERVAL (FEET)
1.0	*125*
2.0	*60*
3.0	*40*
4.0	*30*
5.0	*25*
NOTE: Use this spacing for all except Rock Ditch Checks.	

18" FILTER SOCK CHECK SPACING	
DITCH ℄ SLOPE (%)	SPACING INTERVAL (FEET)
1.0	*110*
2.0	*55*
3.0	*35*
4.0	*25*
5.0	*20*
NOTE: Use this spacing for all except Rock Ditch Checks.	

GENERAL NOTES

1) *The choice of ditch check methods is at the option of the Contractor.*

2) *Use only rock checks in situations where the ditch slope is 6 percent or greater.*

2) *Ditch checks damaged by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired by Contractor at no extra cost to KDOT.*

Std. Base File:	
Plotted By: SJHarvatic	Plot Location:
File: c:\wc\pw\d0409707\KA555401ec852e-01.dgn	
Plot Date: 12/10/2021	

NO.	DATE	REVISIONS	BY	APP'D
3	8/10/16	Revised Standard	RAA	SHS
2	6/28/16	Revised Standard	RAA	SHS
1	6/01/13	Revised Standard	MRM	SHS

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL

DITCH CHECKS

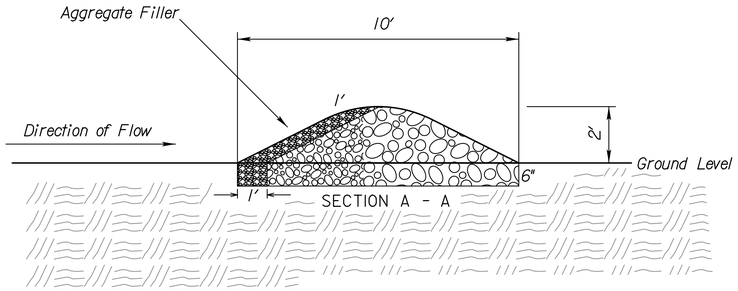
LA852E

FHWA APPROVAL		9/14/2016		APP'D		Scott H. Shields	
DESIGNED	SHS	DETAILED	RAA	QUANTITIES		CADD	RAA
DESIGN CK.	SHS	DETAIL CK.	SHS	QUAN.CK.		CADD CK.	SHS

CADconform Certify This File

CADconform Certify This File

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	39	83



TYPICAL ELEVATION

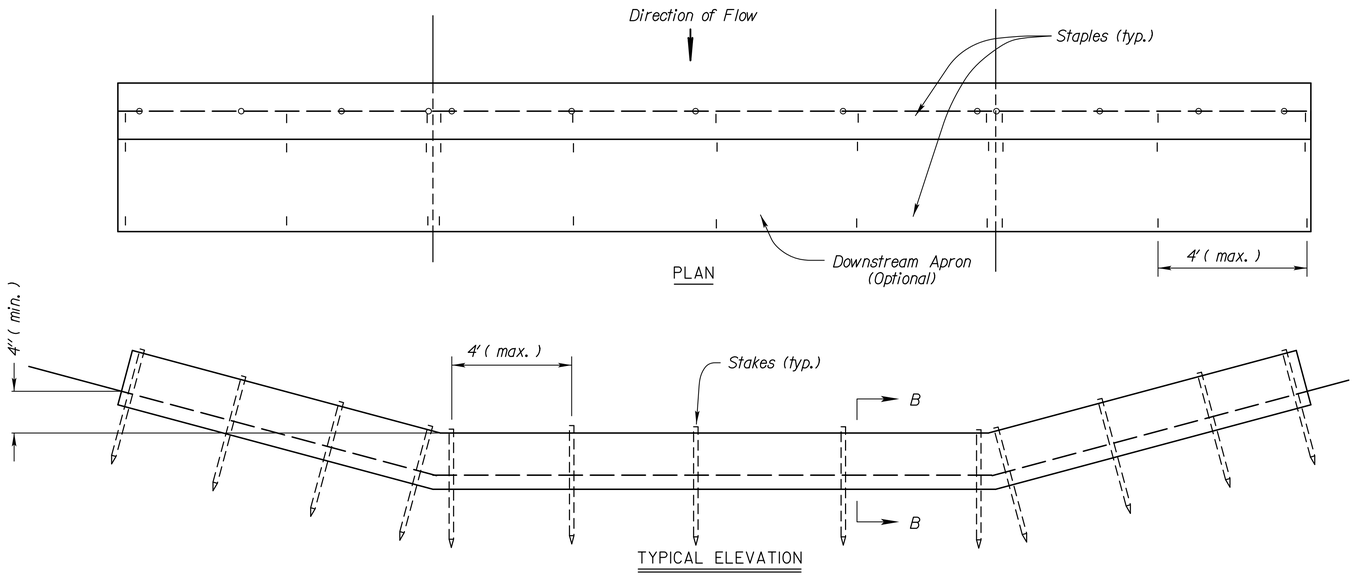
ROCK DITCH CHECK

NO SCALE

TEMPORARY ROCK DITCH CHECK SPACING	
DITCH ℄ SLOPE (%)	*SPACING INTERVAL (FEET)*
5.0	60
6.0	50
7.0	43
8.0	36
9.0	33
10.0	29
NOTE: Use this spacing for Rock Ditch Checks only.	

ROCK DITCH CHECK NOTES

1. Rock shall be clean aggregate, D50-6" and aggregate filler.
2. Place rock in such manner that water will flow over, not around ditch check.
3. Do not use rock ditch checks in clear zone.
4. Excavation: The ditch area shall be reshaped to fill any eroded areas. Prior to placement of the rock, the ditch shall be excavated to the dimensions of the Rock Ditch Check and to a minimum depth of 6" (150mm). After placement of the rock, backfill and compact any over-excavated soil to ditch grade. This work shall be subsidiary to the bid item Temporary Ditch Check (Rock).
5. Aggregate excavated on site may be used as an alternate to the 6" rock, if approved by the Engineer.
6. The Engineer may approve the use of larger aggregates for the downstream portion of the check when conditions warrant their use.
7. When the use of larger rock is approved, D50-6" rock will be placed between the larger aggregate and the aggregate filler.
8. Aggregate filler will be placed on the upstream face of the ditch check. Aggregate filler will comply with Filter Course Type I, Division 1114.

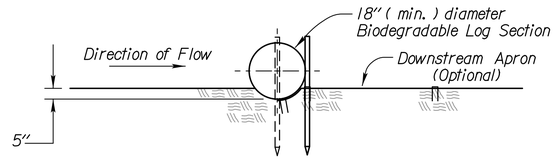


TYPICAL ELEVATION

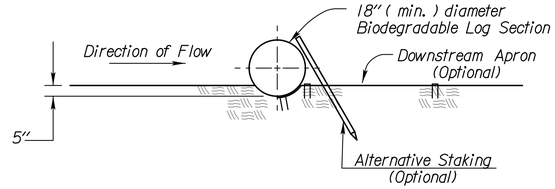
BIODEGRADABLE LOG DITCH CHECK

OR Filter Sock Ditch Check

NO SCALE



SECTION B - B



ALT. DETAIL OPTIONAL

BIODEGRADABLE LOG DITCH CHECK NOTES

1. Use as many biodegradable log sections as necessary to ensure water does not flow around end of ditch check.
2. Overlap sections a minimum of 18".
3. Stakes shall be wood or steel according to Section 2114 of the Standard Specifications. Length of stakes shall be a minimum of 2 x the diameter of the log.
4. Use Erosion Control (Class 1) (Type C) as the downstream apron when required.
5. A downstream apron is required when directed by the Engineer. Apron material will be paid at the contract unit price.
6. Each log or sock (except compost filter socks) should be keyed into the ground at a minimum of 25% of its height. Compost filter socks should be placed on smooth prepared ground with no gaps between the sock and soil.

NO.	DATE	REVISIONS	BY	APP'D
3	11/19/20	Revised Standard	MRD	ML
2	8/10/16	Revised Standard	RAA	SHS
1	10/21/15	Revised Standard	RAA	SHS

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL
ROCK DITCH CHECKS
BIODEGRADABLE LOG DITCH CHECKS

LA852G

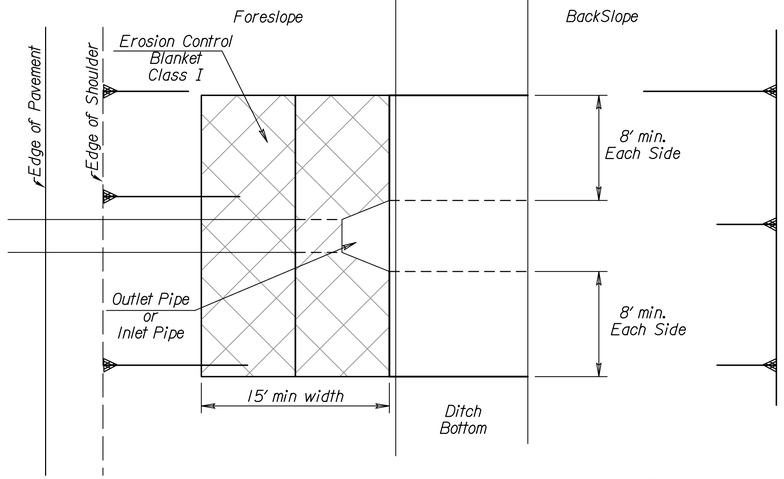
FHWA APPROVAL		11/19/2020	APP'D	Mervin Lare	
DESIGNED	ML	DETAILED	DK	QUANTITIES	CADD RAA
DESIGN CK.	ML	DETAIL CK.	ML	QUAN.CK.	CADD CK. RAA

Std. Base File: la852g.dgn
Plotted By: SJHarvatic
Plot Location:
File: c:\wol\pw\d0409707\KA5554\01\ec852g-01.dgn
Plot Date: 12/10/2021

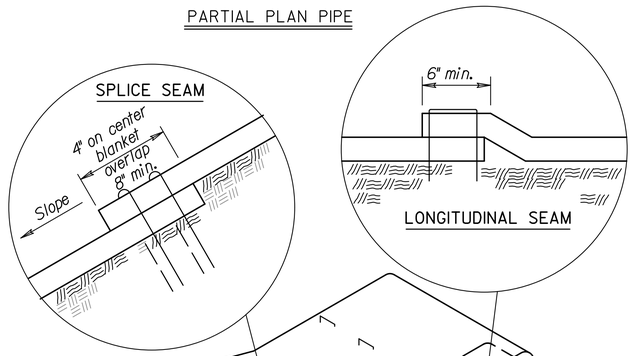
CADconform Certify This File

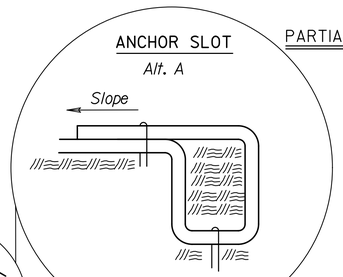
CADconform Certify This File

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	40	83

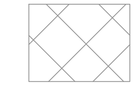


PARTIAL PLAN PIPE

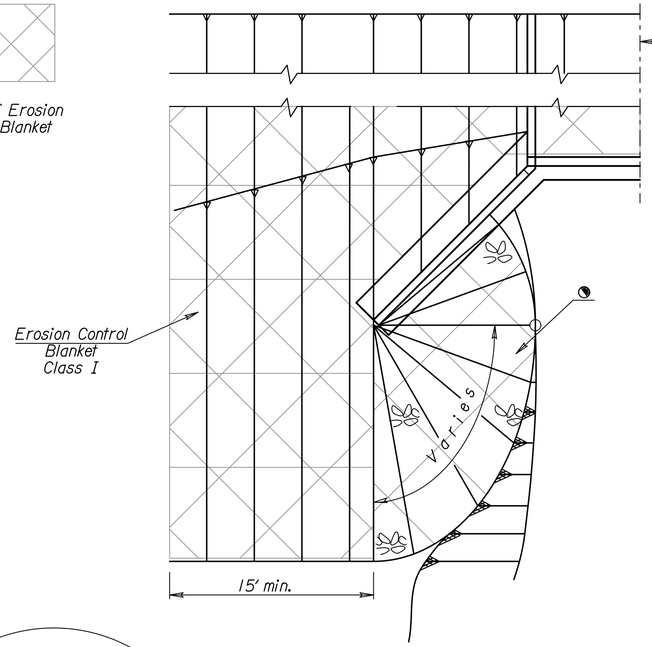




ISOMETRIC VIEW



Limits of Erosion Control Blanket



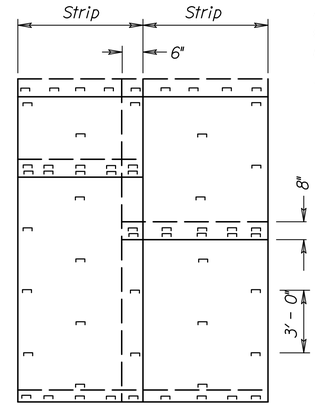
PARTIAL PLAN BOX CULVERT

◔ Erosion Control Class I may be omitted if the area is immediately covered by permanent slope protection (where directed by the plans).

INSTALLATION DETAILS FOR EROSION CONTROL CLASS I

Erosion Control Blankets shall be laid loosely in the direction of the slope, beginning at the bottom of the slope. In order for blanket to be in contact with the soil, lay blanket loosely, avoiding stretching.

1. ANCHOR SLOTS: The top of the blanket should be "slotted in" at the top of the slope and anchored in place with anchors 6 inches apart. The slots should be 6 inches wide x 6 inches deep with the blanket anchored in the bottom of the slot, then backfilled, tamped and seeded.
2. LONGITUDINAL SEAMS: The edges of the blanket should overlap each other a minimum of 6 inches, with anchors catching the edges of both blankets.
3. SPLICE SEAM: When splices are necessary, overlap end a minimum of 8 inches in direction of water flow. Stagger splice seams.
4. TERMINAL FOLD: The bottom edge of the blanket shall be turned under a minimum of 4 inches, then anchored in place with anchors 9 inches apart.
5. TYPICAL ANCHORS: Anchor design shall be as recommended by the manufacturer.
6. STAPLE CHECK: †Establish Staples in 2 rows 4" on center apart. Staple Checks - shall be 30' apart.



PLAN VIEW - ANCHORING DIAGRAM

NOTE:
Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.

Single post ring and shank staple is acceptable.

NO.	DATE	REVISIONS	BY	APP'D
4	3/01/15	Revised Standard	RAA	SHS
3	2/23/15	Revised Standard	RAA	SHS
2	9/15/14	Revised Standard	MRM	SHS
1	9/10/07	Revised Standard	MRM	SHS

KANSAS DEPARTMENT OF TRANSPORTATION

INSTALLATION DETAIL
EROSION CONTROL CLASS I
SLOPE PROTECTION

LA855

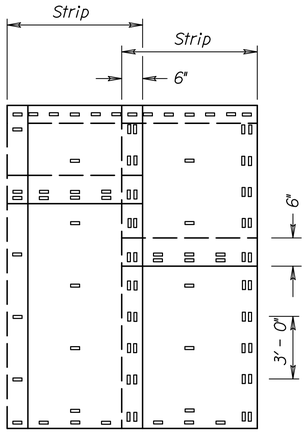
FHWA APPROVAL		3/10/2015	APP'D	Scott H. Shields	
DESIGNED	RAA	DETAILED	RAA	QUANTITIES	CADD RAA
DESIGN CK.		DETAIL CK.		QUAN.CK.	CADD CK. RAA

CADconform Certify This File

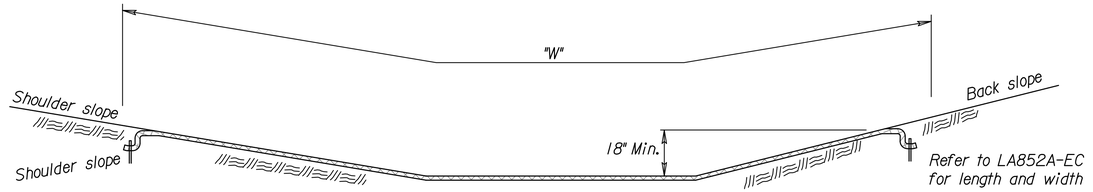
Std. Base File:	la855.dgn
Plotted By:	SJHorvatic
Plot Location:	
File:	c:\wc\pw\d0409707\KA555401\esc855-01.dgn
Plot Date:	12/10/2021

CADconform Certify This File

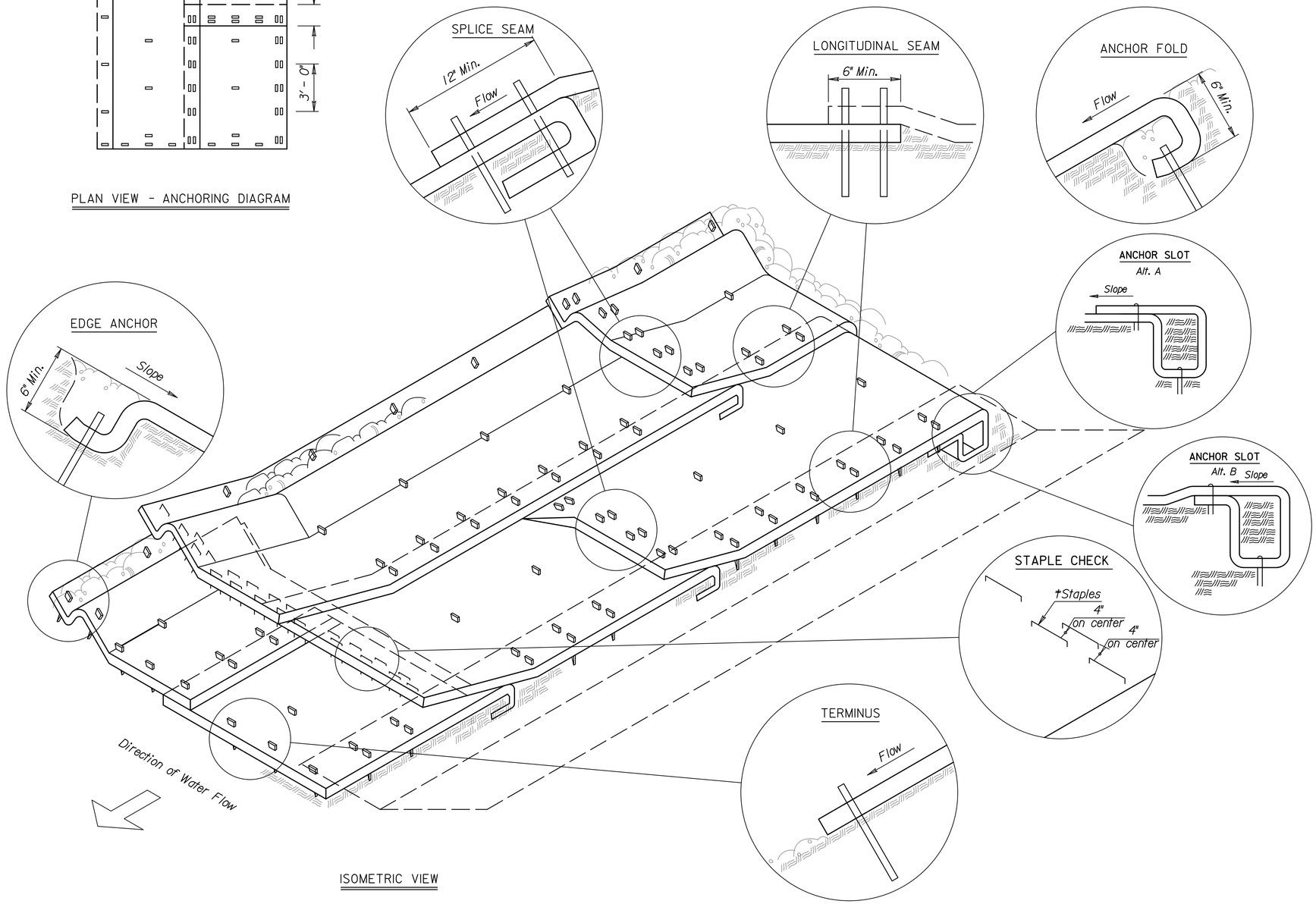
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	41	83



PLAN VIEW - ANCHORING DIAGRAM



CROSS SECTION (Ditch Lining)



ISOMETRIC VIEW

INSTALLATION DETAILS FOR EROSION CONTROL CLASS 2

Erosion Control Mats shall be laid loosely in the direction of the flow, with the first course at the centerline of channel, where applicable. In order for the mat to be in contact with the soil, lay the mat loosely, avoiding stretching.

1. *ANCHOR FOLD: The top of the mat should be folded under, buried and secured with approved anchors placed 6 inches apart. The top edge of the mat should be buried in a slot, 6 inches wide x 6 inches deep; anchored in the bottom of the slot, backfilled, and the mat folded over the top as shown in detail.*

2. *LONGITUDINAL SEAMS: The adjacent edges of the mat should overlap a minimum of 6 inches, with anchors catching the edges of both mats.*

3. *SPLICE SEAM: When splices are necessary, overlapend a minimum of 12 inches in direction of water flow. Stagger splice seams.*

4. *STAPLE CHECK: †Establish Staples in 2 rows 4" on center apart. Staple Checks - shall be 30' apart.*

5. *EDGE ANCHOR: Lay outside edge of mat into trench at top of side slope. Anchor at 3 foot intervals along trench.*

6. *TERMINUS: The bottom edge of the mat shall be anchored in place with anchors spaced at 9 inch intervals along the terminating edge.*

7. *TYPICAL ANCHORS: Anchor design shall be as recommended by the manufacturer.*

4	9/25/15	Modified Staple Check	RAA	SHS
3	9/15/14	Revised Standard	RAA	SHS
2	3/01/13	Revised Standard	MRM	SHS
1	9/22/99	Revised Standard	WCL	RDR
NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

INSTALLATION DETAIL
EROSION CONTROL CLASS 2
FLEXIBLE CHANNEL LINER

LA856

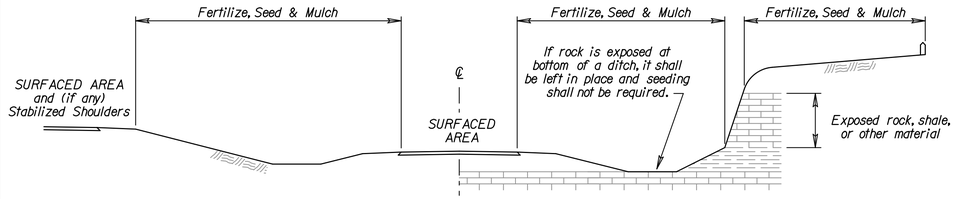
FHWA APPROVAL		11/02/2015	APP'D	Scott H. Shields	
DESIGNED	RAA	DETAILED	RAA	QUANTITIES	CADD RAA
DESIGN CK.	SHS	DETAIL CK.	SHS	QUAN.CK.	CADD CK.

CADconform Certify This File

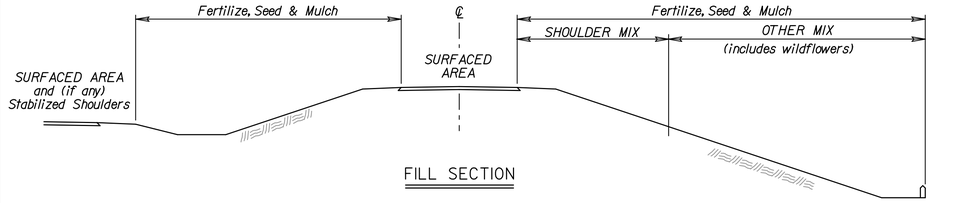
Std. Base File: la856.dgn
Plotted By: SJHorvatic
Plot Location:
File: c:\wc\pw\d0409701\KA555401\eecd856-01.dgn
Plot Date: 12/10/2021

CADconform Certify This File

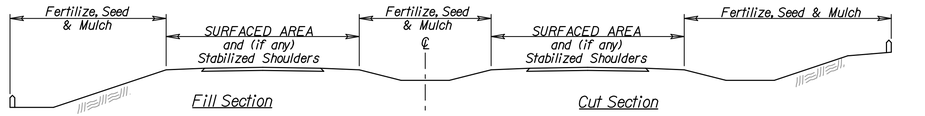
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	42	83



CUT SECTION



FILL SECTION



TYPICAL SECTION - DUAL PAVEMENT

SEEDING PERIODS

COOL SEASON	WARM SEASON
February 15 to April 20 and August 15 to Sept. 30	November 15 to June 1
SPECIES	SPECIES
Bluegrasses	Big Bluestem
Bromegrasses	Blue Grama
Canada Wildrye	Buffalograss
Fescues	Indiangrass
Prairie Junegrass	Little Bluestem
Ryegrasses	Sand Bluestem
Sterile Wheatgrass	Sand Dropseed
Tall Dropseed	Sand Lovegrass
Western Wheatgrass	Side Oats Grama
	Switchgrass
	Wildflower Mixes

In areas of 1 acre or more, if Cool Season grasses are mixed with Warm Season grasses, seed the area during the Warm Season seeding period.

When the area to be seeded is less than 1 acre, seed the area any time of the year.

SODDING PERIODS

COOL SEASON	WARM SEASON
March 1 to April 15	May 15 to September 15
SPECIES	SPECIES
Bluegrass Sod	Buffalograss Sod
Fescue Sod	

GENERAL NOTES

The entire disturbed area, excepting the paved or surfaced areas, steep rocky slopes and areas of undisturbed native sod or other desirable vegetation shall be fertilized (limed when required), seeded and mulched. Soil preparation shall conform to the Standard Specifications except as noted below.

All borrow areas shown on the plans are to be fertilized, seeded, and mulched. However, operation in borrow areas where crops are growing may be omitted when requested by the owner.

If temporary cover has provided stable slopes with no erosion, seed the permanent grasses into the existing cover. If there has been erosion that requires repair prior to seeding, then it may be necessary to regrade the area, resulting in bare ground.

FERTILIZER: A ratio and application rate that equals or exceeds the required minimum rate per acre of N, P_2O_5, K_2O listed in Summary of Seeding Quantities will be acceptable.

MULCHING: Mulch shall be spread uniformly over all disturbed areas and punched in the soil, unless otherwise noted on the plans. The rate of application per acre, thickness in place, for the mulching material is generally as follows:

1¾ - 2¼ Tons per Acre = 1½" loose depth spread uniformly over acre.

Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.

Other vegetative mulches are acceptable only with the Engineer's concurrence.

The above rate is a guide. It will be at the discretion of the Engineer to determine what rate is sufficient for adequate protection of newly seeded areas.

NATIVE WILDFLOWER MIX 1

PLS RATE	NAME	QTY (lb)
0.3	Butterfly Milkweed	0.3
0.3	Common Milkweed	0.3
0.3	Black Eyed Susan	0.3
0.5	Blanket Flower	0.5
0.5	False Sunflower	0.5
0.5	Lance-Leaf Coreopsis	0.5
0.2	Maximilian Sunflower	0.2
0.1	New England Aster	0.1
0.2	Pinnate Prairie Coneflower	0.2
0.2	Plains Coreopsis	0.2
0.3	Purple Coneflower	0.3
0.3	Upright Prairie Coneflower	0.3
0.3	Dames Rocket	0.3
0.3	Lemon Mint	0.3
0.2	Pitcher Sage	0.2
0.2	Wild Bergamot	0.2
1.0	Illinois Bundleflower	1.0
0.2	Common Evening Primrose	0.2
0.1	Hoary Verbena	0.1
0.8	Purple Prairie Clover	0.8
0.3	Roundhead Lespedeza	0.3
3.0	Showy Partridge Pea	3.0
0.2	White Prairie Clover	0.2
10.3	Total (lb)	10.3

NATIVE WILDFLOWER MIX 2

PLS RATE	NAME	QTY (lb)
0.3	Butterfly Milkweed	
0.3	Black Eyed Susan	
0.5	Black Sampson Coneflower	
1.0	Blanket Flower	
0.2	Maximilian Sunflower	
0.2	Plains Coreopsis	
0.2	Upright Prairie Coneflower	
0.2	Western Yarrow	
0.3	Lemon Mint	
0.4	Pitcher Sage	
1.5	Illinois Bundleflower	
0.2	Common Evening Primrose	
1.0	Blue Wild Indigo	
0.4	Leadplant	
0.4	Purple Prairie Clover	
0.3	White Prairie Clover	
7.4	Total (lb)	

Package and deliver the wildflower seed separately from the grass seed mix. Package and deliver the Tall Drop Seed separately from the grass seed and the wildflower mix. Place the grass seed (except Tall Drop Seed) in the large seed box and drill (cover) seed 1/8" - 1/4". Place the wildflower seed in a separate seed box and drill (cover) seed 1/16" maximum. Place the Tall Drop Seed in a separate (third) seed box and place the seed (using the seed drill) on the soil surface.

OPTION: Broadcast Tall Drop Seed on the soil surface.

SUMMARY OF SEEDING QUANTITIES

P.L.S. RATE/ACRE SHLDR	P.L.S. RATE/ACRE OTHER	ACRES SHLDR	ACRES OTHER	BID ITEM	QUANTITY	UNIT
250		1.6		Fertilizer (13-13-13)	410	LBS
	50		1.0	Fertilizer (15-30-15)	49	LBS
0.5		1.6		Seed (Blue Grama Grass) (Lovington)	1	LBS
4.5		1.6		Seed (Buffalograss) (Treated)	7	LBS
	10		1.0	Seed (Canada Wildrye Grass)	10	LBS
45		1.6		Seed (Perennial Ryegrass)	74	LBS
	5.1		1.0	Seed (Sand Bluestem Grass) (Garden)	5	LBS
0.5	0.5	1.6	1.0	Seed (Sand Dropseed Grass)	1	LBS
	2		1.0	Seed (Sand Lovegrass) (Bend)	2	LBS
7	7	1.6	1.0	Seed (Side Oats Grama Grass) (El Reno)	18	LBS
	10		1.0	Seed (Sterile Wheatgrass)	10	LBS
	1		1.0	Seed (Switchgrass) (Blackwell)	1	LBS
45		1.6		Seed (Tall Fescue) (Endophyte Free)	74	LBS
6	4	1.6	1.0	Seed (Western Wheatgrass) (Barton)	14	LBS
	10.3		1.0	Seed (Native Wildflower Mix 1)	10	LBS
				Mulching *		

SHLDR = Seeded with the Shoulder Mix. Typically 15 feet for 2-lane roads and 30 feet for 4-lane roads. Includes outside roadsides, turfed portions of shoulders, and turfed portion of the median.

OTHER = Seeded with the "Other" Mix. Designated as all other turf areas, except the Shoulder. Usually includes a Native Wildflower Mix.

NOTE: Projects less than 1 acre shall be bid as "Seeding" by the lump sum. All disturbed areas shall be seeded, fertilized and mulched at the listed rate per acre. The acres are estimated.

Refer to the Standard Specifications, Division 900, Section 904 'Seeding', and Section 907 'Sodding', for the seeding and sodding seasons.

** See LA852A for mulching quantity. The quantity of mulch is estimated (Acres of Seeding X 1.5 X 2 Tons/Acre). The total mulch required shall be determined in the field. The bid item for mulching shall be paid for according to the Standard Specifications.*

NO.	DATE	REVISIONS	BY	APP'D
2	08/03/20	Added Seeding / Sodding Periods Charts	MRD	ML
1	04/18/19	Revised Standard	MRD	SHS

KANSAS DEPARTMENT OF TRANSPORTATION

PERMANENT SEEDING
SUMMARY OF SEEDING QUANTITIES

LA850

FHWA APPROVAL	05/06/2019	APP'D	Scott H. Shields		
DESIGNED	MRD	DETAILED	MRD	QUANTITIES	CADD
DESIGN CK.		DETAIL CK.		QUAN.CK.	CADD CK.

Std. Base File:
Plotted By: SJHorvatic | Plot Location:
File: c:\wcjpw\d0409707\KA555401\eps850-01.dgn
Plot Date: 12/10/2021

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	43	83

SYMBOL KEY

- REMOVE SIGN
- REMOVE POST
- REMOVE FOOTING
- REMOVE SIGN & POST
- REMOVE POST & FOOTING
- REMOVE SIGN, POST, & FOOTING
- MOUNT ON WOOD POST IN CONCRETE FOOTING
- MOUNT ON WOOD POST IN SOIL
- MOUNT ON STEEL BEAM BREAKAWAY POST
- MOUNT ON STEEL U-POST
- MOUNT ON PSST POST
- MOUNT ON EXISTING POST
- MOUNT ON VERTICAL SUPPORT
- SHOULDER MOUNTED INSTALLATION
- OFFSET MOUNTED INSTALLATION
- EXISTING SIGN
- EXISTING SIGN TO BE OVERLAID
- SIGN IS NOT PART OF PROJECT
- TYPE 'A' DELINEATOR (RIGID)
- TYPE 'A' DELINEATOR (RIGID) (BK-BK)
- TYPE 'B' DELINEATOR (RIGID)
- TYPE 'A' DELINEATOR (FLEXIBLE)
- TYPE 'A' DELINEATOR (FLEXIBLE) (BK-BK)
- TYPE 'B' DELINEATOR (FLEXIBLE)
- TYPE 2 OBJECT MARKER
- TYPE 3 OBJECT MARKER
- TYPE 3 OBJECT MARKER (BK-BK)

GENERAL NOTES

In order to expedite the completion of the project for traffic service, the signing and delineator work shall be sequenced with any other contract work such that the phases of construction may proceed and be completed at the same time.

New signs erected on the project which are in conflict with existing signing are to be completely covered until the existing signs are removed or the new signing is applicable. The existing signs that are being replaced, removed, or do not follow the current MUTCD signing standards are to be removed when the project is completed or as determined by the Engineer.

The Contractor shall exercise caution at all times when installing sign supports in and around areas where utilities exist, either underground or overhead, and will be held responsible for any damage incurred to the system. The installation of sign supports shall include the excavation, drilling, or driving the support footing and the erection of the sign support. The contractor shall exercise caution when working around any existing signs that are to remain and will be held responsible for any damage to the signs, supports, or footings. The Contractor shall exercise care when working around shrubbery while removing or installing signs or sign supports.

An existing sign post installation shall be plumb and the compaction of the backfill soil shall comply with the specifications after the removal and resetting of a sign, the removal and replacement of a sign, or the installation of a new sign.

The Contractor shall provide mounting bolts that are of a length that does not extend more than a nominal 1 inch beyond the sign post. The Contractor shall not make any field modifications to the mounting bolt prior to or after the sign is installed.

Specific service (LOGO) signs that are to be removed shall have the business logo plaques removed and transported to location determined by KDOT, at which time the plaques become the property of KDOT. The Contractor will be assessed a replacement cost for any damage to a business logo plaque prior to the plaque becoming the property of KDOT.

The materials and fabrication for signing and delineation work shall conform to the Standard Specifications for State Road and Bridge Construction (2015 edition) and Special Provisions.

INDEX OF SHEETS

NO.	DATE	REVISIONS	BY	APP'D
2	10/01/19	Changed symbols, notes, & index	D.D.G.	E.W.N.
1	7/23/10	Changed General Notes and Spec Book Date	D.D.G.	D.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SIGNING SYMBOL KEY
GENERAL NOTES
AND INDEX

TE402 7/1/03

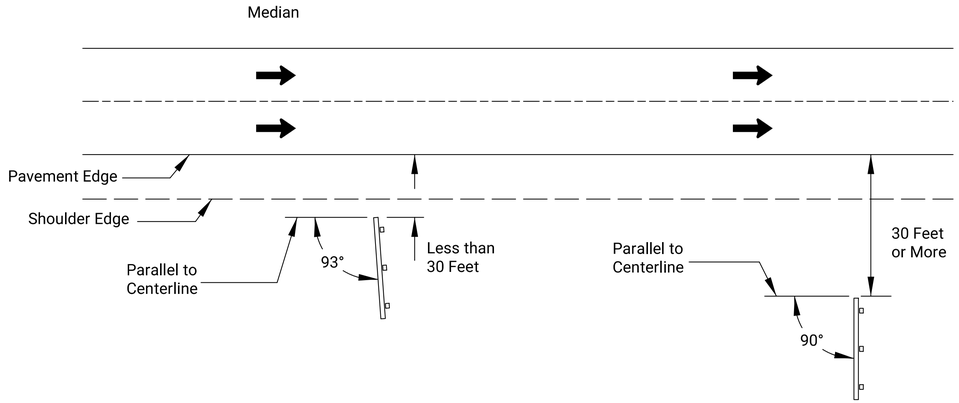
FHWA APPROVAL			10/01/2019	APP'D	Steven A. Buckley		
DESIGNED	D.D.G.	DETAILED	W.S.B.	QUANTITIES		TRACED	
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.		TRACE CK.	

KDOT Graphics Certified 12-10-2021

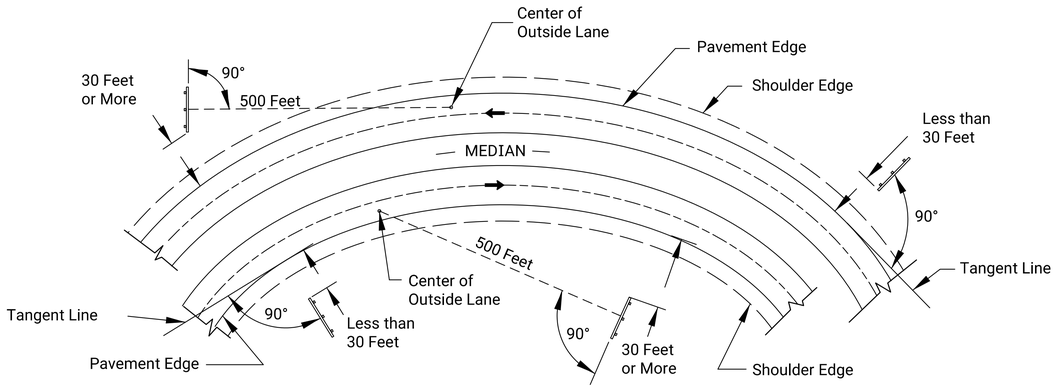
KDOT Graphics Certified

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401pss402-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	44	83

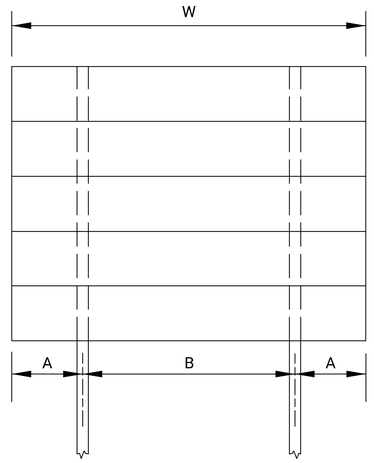


ANGLE OF SIGNS ERECTED ON STRAIGHT ROADWAY



ANGLE OF SIGNS ERECTED ON CURVED ROADWAY

GENERAL NOTE:
Gore and median signs shall normally be erected such that the sign face is truly vertical and rotated 93 degrees away from the center of the lane which the sign serves. All angles are measured to the face of the sign.



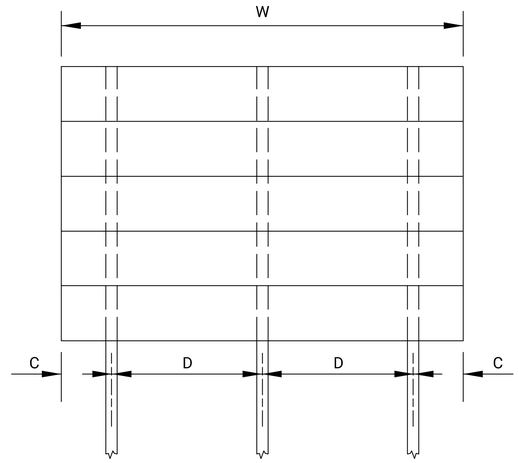
TWO POST SPACING

Wood Post		
A	B	W
6" (Min.)	⅗ W (Min.)	NA

Steel Beam Post (Width less than or equal to 13'-0")		
A	B	W
12" (Min.)	8'	10'-0" (Min.)

Steel Beam Post (Width greater than 13'-0")		
A	B	W
32" (Min.)	8' (Min.)	13'-6" (Min.)

Spacing Pattern: A+B+A
W= Sign Width
A= ⅕ W
B= ⅗ W



THREE POST SPACING

Wood Post		
C	D	W
6" (Min.)	4' (Min.)	9'-0" (Min.)

Steel Beam Post (Width less than or equal to 21'-0")		
C	D	W
12" (Min.)	8'	18'-0" (Min.)

Steel Beam Post (Width greater than 21'-0")		
C	D	W
32" (Min.)	8' (Min.)	21'-6" (Min.)

Spacing Pattern: C+D+D+C
W= Sign Width
C= ⅛ W
D= ⅜ W

NOTE: All spacing dimensions are measured to the centerline of the posts.

POST SPACING FOR REINFORCED PANEL SIGNS

NO.	DATE	REVISIONS	BY	APP'D
1	10/01/19	Changed the post spacing tables and notes	D.D.G.	E.W.N.

KANSAS DEPARTMENT OF TRANSPORTATION

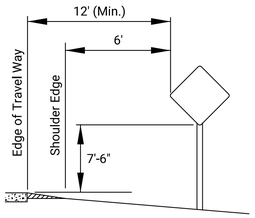
POST SPACING FOR REINFORCED PANEL SIGNS AND ANGLE OF SIGNS

TE404 7/1/03

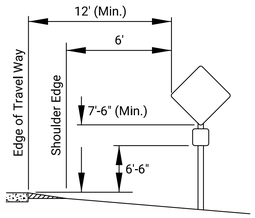
FHWA APPROVAL		10/01/2019	APP'D	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED	W.S.B.	QUANTITIES	TRACED
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.	TRACE CK.

KDOT Graphics Certified 12-07-2020

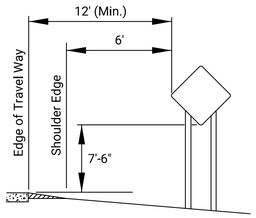
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	45	83



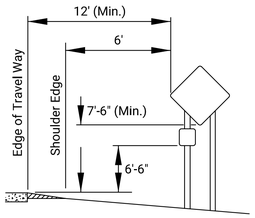
ONE POST



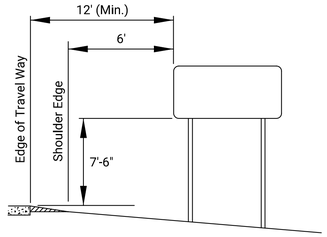
ONE POST WITH SUPPLEMENTAL SIGN



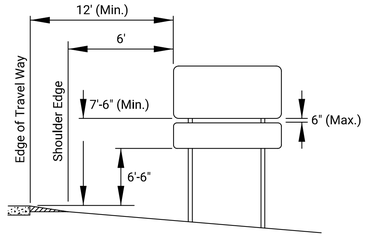
TWO POSTS



TWO POSTS WITH SUPPLEMENTAL SIGN

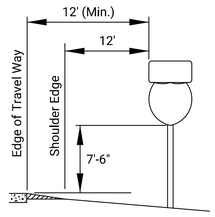


MULTIPLE POSTS



MULTIPLE POSTS WITH SUPPLEMENTAL SIGN

RAMPS AND EXPRESSWAY INTERSECTIONS



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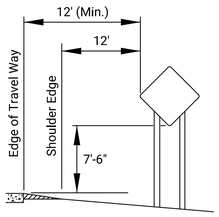

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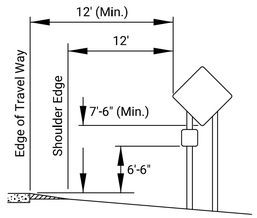

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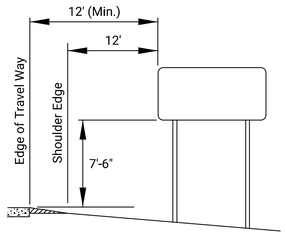

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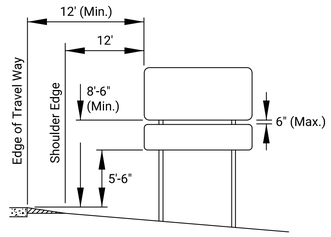

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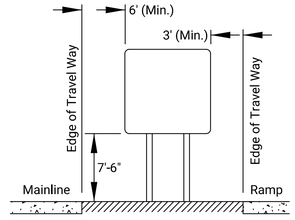
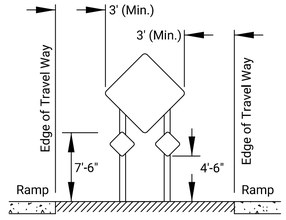
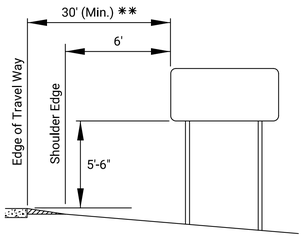


MAINLINE/RAMP

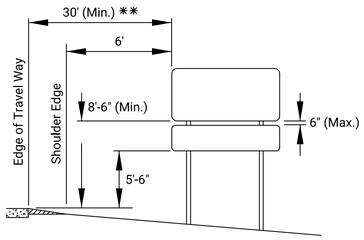


RAMP/RAMP

MAINLINE - SHOULDER MOUNT



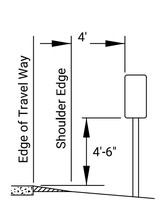
MULTIPLE POSTS



MULTIPLE POSTS WITH SUPPLEMENTAL SIGN

** 60' Max.

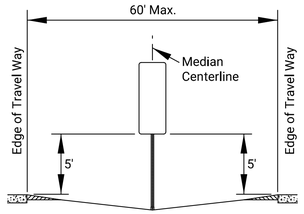
MAINLINE - OFFSET MOUNT



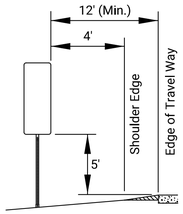
SHOULDER

Post Sizes:
D10-1: 2 Lb/Ft "U" Post
D10-2: 2 Lb/Ft "U" Post
D10-3: 3 Lb/Ft "U" Post

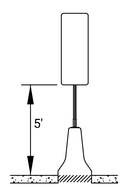
MILE POSTS



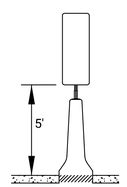
MEDIAN WIDTH
60' OR LESS
(SOIL)



MEDIAN WIDTH
GREATER THAN 60'
(SOIL)



32" BARRIER

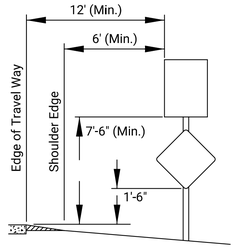


51" BARRIER

Post Size (Soil): 2" PSST Post with Footing

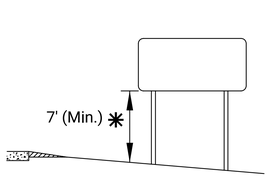
Post Size (Barrier): 1 3/4" PSST Post

INTERMEDIATE REFERENCE MARKERS

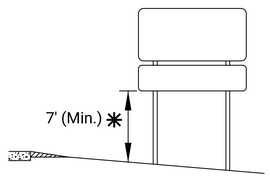


TYPICAL

ADOPT A HIGHWAY



PRIMARY SIGN



PRIMARY SIGN WITH SUPPLEMENTAL SIGN

* NOTE: Measured from the nearest point between the sign and the groundline.

GROUND CLEARANCE FOR STEEL BEAM POSTS

The "Edge of Travel Way" is the edge line or the edge of driving lane.

The outer edge of the mainline sign shall be a minimum of 10' from the right of way line. The outer edge of the ramp sign shall not extend beyond the right of way line.

A minimum lateral clearance of 6' from pavement edge where lateral offsets are limited may be used.

When signs are behind guard rail, the near edge of the sign shall not extend beyond the back side of the guard rail and the nearest sign post shall be a minimum of 5' from the face of the guard rail. Shoulder mounted signs shall not be located between 100' in advance of and 50' beyond the nose of the guard rail.

The gore sign shall be installed in the paved gore area. The edges of the gore sign shall not extend beyond the shoulder edge. The minimum distance from the centerline of the posts to the back of the paved gore area is 2'.

Both the mounting height and ground clearance minimum dimensions are to be met for steel beam post installations.

NOTES

Signs may be moved laterally or longitudinally if it will improve visibility of the sign or other signs or if it will protect the sign more.

The maximum allowable longitudinal adjustments are:
- Advance guide: 1320'
- Supplemental guide: 1320'
- Motorist service: 1320'
- Exit direction: 100'
- Mileage: 2640'
- Merge: 50'
- Mainline signs within an interchange: 50'
- Milepost or intermediate reference marker: 50'
- Ramp: 50'

If any sign with a distance or mileage is longitudinally adjusted, the distance or mileage shall be checked and modified as needed.

The minimum spacing between signs are:
- Mainline guide sign to mainline guide sign: 800'.
- Mainline guide sign to regulatory, warning, route marker sign: 400'.
- Ramp sign to ramp sign: 100'.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

MOUNTING HEIGHT & LATERAL OFFSET FOR FREEWAYS AND EXPRESSWAYS

TE406 10/01/19

FHWA APPROVAL			10/01/2019	APP'D	Eric W. Nichol		
DESIGNED	D.D.G.	DETAILED	D.D.G.	QUANTITIES		TRACED	
DESIGN CK.	E.W.N.	DETAIL CK.	E.W.N.	QUAN. CK.		TRACE CK.	

KDOT Graphics Certified 12-07-2020

KDOT Graphics Certified

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401pss406-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	46	83

DATE	BY	REFERENCES NOTED	REFERENCES CHECKED

Scale: 1" = 50'

R2-1 SPEED LIMIT 70

354+52

M3-4 M1-5 WEST 254

359+80

4 345 6 7 8 9 N 89° 52' 43" E 350 1 2 3 4 355 6 7 8 9 360

K-254 HWY

℄ Proposed Improvements

353+00

D3-2 Rock Rd

OM1-3 OM1-3 R6-3 DIVIDED HIGHWAY R1-1 STOP R6-1R ONE WAY R6-1L ONE WAY R1-2 YIELD R6-1R ONE WAY

362+65 362+60 362+58

Rock Rd. 8 9 50 1 2

OM1-3 OM1-3 ONE WAY R6-1L

363+38 363+92 364+86

R5-1 DO NOT ENTER

364+80

R5-1 DO NOT ENTER

373+00

Rock Rd D3-2

Scale: 1" = 50'

℄ Proposed Improvements

360 1 2 3 4 365 6 7 8 9 370 1 2 3 4 375

K-254 HWY

361+19 361+27 R5-1 DO NOT ENTER R6-1L ONE WAY 362+22 362+57 61st N D3-1 Rock Rd D3-1

363+44 363+37 R6-1L ONE WAY R6-1R ONE WAY R6-1R ONE WAY R1-1 STOP R6-3 DIVIDED HIGHWAY R1-2 YIELD

366+43 254 EAST M1-5 M3-2

371+49 SPEED LIMIT 70 R2-1

NOTE: KDOT and the Contractor will coordinate with Sedgwick County Public Works regarding the removal of the street name signs prior to construction and re-installation after construction by the Sedgwick County Public Works.

KANSAS DEPARTMENT OF TRANSPORTATION

SIGNING INSTALLATION

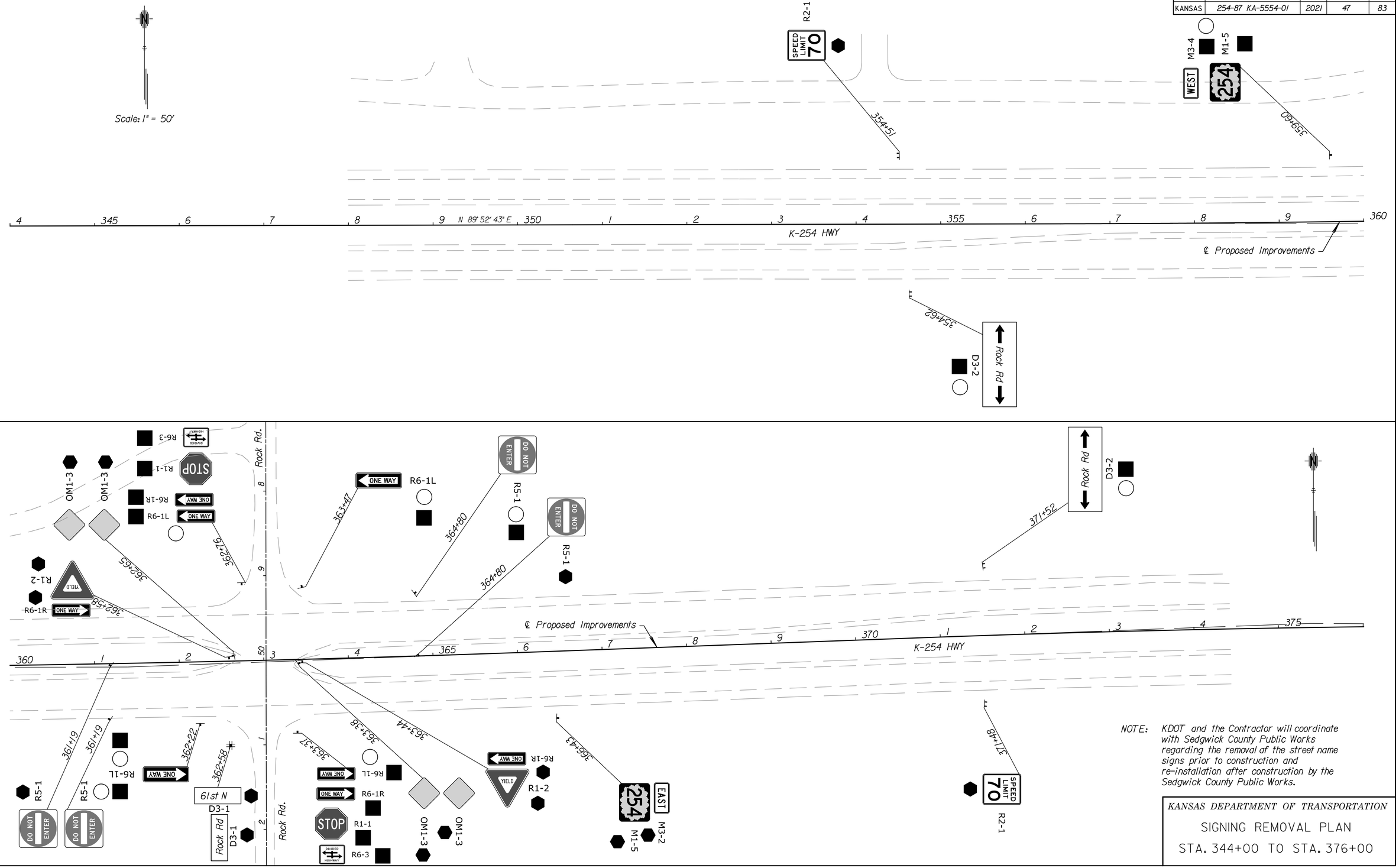
STA. 344+00 TO STA. 376+00

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401ppl-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	47	83

DATE	BY	REFERENCES NOTED
		REFERENCES CHECKED

Scale: 1" = 50'



NOTE: KDOT and the Contractor will coordinate with Sedgwick County Public Works regarding the removal af the street name signs prior to construction and re-installation after construction by the Sedgwick County Public Works.

KANSAS DEPARTMENT OF TRANSPORTATION

SIGNING REMOVAL PLAN

STA. 344+00 TO STA. 376+00

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipwd\0409707\KA5554401prm-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	48	83

QUANTITIES SHEET

SIGNS, POSTS, & FOOTINGS TO BE INSTALLED ON PROJECT

PLAN SHEET NUMBER	PLAN STATION NUMBER	CENTERLINE LOCATION / INSTALL POSITION	SIGN DESIGNATION	SIGN SIZE	SIGN LAYOUT SHEET NUMBER	TYPE OF SIGN FABRICATION			4" X 6" POSTS			3I2.25 ALUMINUM BEAM	U-POSTS		GALVANIZED STEEL BEAM POSTS						PERFORATED SQUARE STEEL TUBE (PSST) POSTS										CONCRETE FOOTINGS					SIGN STRUCTURE TYPE							VERTICAL SUPPORT MOUNT	MOUNT ABOVE GUIDE SIGN DESIGNATION
									WOOD		STEEL				W6x9		W10x12		W10x22		1 3/4"			2"			2 1/4"			2 1/2"				WOOD POST	STEEL BEAM POST										
																																		A36		A572 (ALT)								
						FLAT SHEET	REINFORCED PANEL	OVERLAY	FLAT SHEET SIGN	REINFORCED PANEL SIGN	STRUCTURAL TUBING		2 LB PER FT	3 LB PER FT	A36	A572 (ALT)	A36	A572 (ALT)	A36	A572 (ALT)	POST	FOOTING	BRACKET	POST	FOOTING	BRACKET	POST	FOOTING	POST	FOOTING				18" DIA.	24" DIA.	30" DIA.	24" DIA.	30" DIA.	OVERHEAD	CANTILEVER	BUTTERFLY	BRIDGE MOUNT ATTACHMENT	MAST ARM	SINGLE TAPERED TUBE		
	353+00	R/S	D3-2	108x36	Exist.					3																																
	359+60	L/S	M3-4	36x18	Exist.				1																																	
			M1-5	45x36	Exist.																																					
	361+27	R/S	R5-1	30x30	Exist.				1																																	
	364+86	L/S	R5-1	30x30	Exist.				1																																	
	373+00	L/S	D3-2	108x36	Exist.					3																																
	363+92	L/S	R6-1L	36x12	Exist.				1																																	
	362+60	R/S	R6-1L	36x12	Exist.				2																																	
			R6-1R	36x12	Exist.																																					
			R1-1	48x48	Exist.																																					
			R6-3	30x24	Exist.																																					
	362+22	R/S	R6-1L	36x12	Exist.				1																																	
	363+37	L/S	R6-1L	36x12	Exist.				2																																	
			R6-1R	36x12	Exist.																																					
			R1-1	48x48	Exist.																																					
			R6-3	30x24	Exist.																																					

CENTERLINE LOCATION
L or LL - Left of Centerline
R or RR - Right of Centerline
C - On the Centerline

INSTALL POSITION
S - Shoulder Mount
O - Offset Mount
G - Gore Mount
M - Median Mount
OH - Overhead Mount

NOTE: See standard plan sheet TE590 for detailed specifications.

NO.	DATE	REVISIONS	BY	APP'D
2	10/01/19	Added Tapered Tube. Removed Couplers.	D.D.G.	E.W.N.
1	7/23/10	Added Coupler and Coupler/Footing Quantity	D.D.G.	D.B.

FHWA APPROVAL			10/01/2019	APP'D	Steven A. Buckley		
DESIGNED	D.D.G.	DETAILED	K.S.	QUANTITIES		TRACED	B.B.
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.		TRACE CK.	

TE430

7/1/03

KDOT Graphics Certified 10-06-2021

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401pss430-01.dgn

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	49	83

SUMMARY OF QUANTITIES

SIGNS

TYPE	NUMBER	SQUARE FEET
FLAT SHEET		
REINFORCED PANEL		
OVERLAY		

DELINEATORS

TYPE	FLEXIBLE DELINEATOR		RIGID DELINEATOR	
	TYPE I ANCHOR	TYPE III ANCHOR	"U" POST	BRACKET MOUNT
TYPE 'A' WHITE				
TYPE 'A' YELLOW				
TYPE 'B' WHITE				
TYPE 'B' YELLOW				
TYPE 'A' WHITE (BACK TO BACK)				
TYPE 'A' YELLOW (BACK TO BACK)				

OBJECT MARKERS

TYPE		NUMBER
TYPE 2 ("U" POST)		
TYPE 3 ("U" POST)		
INFORMATION ONLY	OM3-L	
	OM3-R	
	OM3-C	
TYPE 3 ("U" POST) (BACK TO BACK)		

POSTS AND ALUMINUM BEAMS

	4" x 6" POST			3I2.25 ALUMINUM BEAM	"U" POST		GALVANIZED STEEL BEAM POST						PERFORATED SQUARE STEEL TUBE (PSST)			
	WOOD		STEEL				W6x9		W10x12		W10x22					
	FLAT SHEET SIGN	REINFORCED PANEL SIGN	STRUCTURAL TUBING		2 LBS/FT	3 LBS/FT	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	1-3/4"	2"	2-1/4"	2-1/2"
NUMBER	9	6														
FEET	158.6	105.8														

POST FOOTINGS AND BRACKETS

	CONCRETE FOOTING (DIA.)					PERFORATED SQUARE STEEL					
						TUBE FOOTING				BRACKET	
	WOOD	A36 STEEL		A572 STEEL (ALT)							
	18"	24"	30"	24"	30"	1-3/4"	2"	2-1/4"	2-1/2"	1-3/4"	2"
NUMBER											
FEET											

BASE PLATES AND STUB POSTS

	W6x9		W10x12		W10x22	
BREAKAWAY BASES	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)
BASE PLATE (TOP)						
STUB POST WITH BASE PLATE						
NON-BREAKAWAY BASES						
BASE PLATE						

REMOVALS

TYPE	NUMBER
SIGNS	
POSTS	
FOOTINGS	
SIGN STRUCTURES	

NUMBER & LENGTHS OF POSTS & ALUMINUM BEAMS (INFORMATION ONLY)

LENGTH OF POST OR BEAM	4" x 6" POST			3I2.25 ALUMINUM BEAM	"U" POST		GALVANIZED STEEL BEAM POST						PERFORATED SQUARE STEEL TUBE (PSST)			
	WOOD		STEEL				W6x9		W10x12		W10x22					
	FLAT SHEET SIGN	REINFORCED PANEL SIGN	STRUCTURAL TUBING		2 LBS/FT	3 LBS/FT	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	1-3/4"	2"	2-1/4"	2-1/2"
2.1' - 4'																
4.1' - 6'																
6.1' - 8'																
8.1' - 10'																
10.1' - 12'																
12.1' - 14'	2															
14.1' - 16'	2	2														
16.1' - 18'	1															
18.1' - 20'		4														
20.1' - 22'	4															
22.1' - 24'																
24.1' - 26'																
26.1' - 28'																
28.1' - 30'																
30.1' - 32'																

SIGN STRUCTURES

TYPE	NEW	MODIFIED	REMOVE AND RESET	RESET
OVERHEAD STRUCTURE				
CANTILEVER STRUCTURE				
BUTTERFLY STRUCTURE				
BRIDGE MOUNT ATTACHMENT				
MAST ARM SIGN SUPPORT				
SINGLE TAPERED TUBE SIGN SUPPORT				

NO.	DATE	REVISIONS	BY	APP'D
2	10/01/19	Revised Tables	D.D.G.	E.W.N.
1	7/23/10	Revised Tables	D.D.G.	D.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES FOR INSTALLATIONS AND REMOVALS

TE439 7/1/03

FHWA APPROVAL		10/01/2019	APP'D	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED	K.D.S.	QUANTITIES	TRACED
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.	TRACE CK.

KDOT Graphics Certified 10-04-2021

KDOT Graphics Certified

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA5554401pss439-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	50	83

SUMMARY OF QUANTITIES

REMOVAL AND RESETTING OF SIGNS ON PROJECT

EXISTING PLAN STATION NUMBER	NEW PLAN STATION NUMBER	SIGN TYPE	SIGN SIZE
354+62	353+00	D3-2	108x36
359+60	359+60	M3-4	36x18
		M1-5	45x36
361+27	361+27	R5-1	30x30
364+86	364+86	R5-1	30x30
371+52	373+00	D3-2	108x36
363+92	363+92	R6-1L	36x12
362+60	362+60	R6-1L	36x12
		R6-1R	36x12
		R1-1	48x48
		R6-3	30x24
362+22	362+22	R6-1L	36x12
363+37	363+37	R6-1L	36x12
		R6-1R	36x12
		R1-1	48x48
		R6-3	30x24

EXISTING PLAN STATION NUMBER	NEW PLAN STATION NUMBER	SIGN TYPE	SIGN SIZE

EXISTING PLAN STATION NUMBER	NEW PLAN STATION NUMBER	SIGN TYPE	SIGN SIZE

EXISTING PLAN STATION NUMBER	NEW PLAN STATION NUMBER	SIGN TYPE	SIGN SIZE

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
FOR REMOVAL AND RESETTING
OF SIGNS

TE445 7/1/03

FHWA APPROVAL			7/22/2003	APP'D	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED	K.D.S.	QUANTITIES		TRACED
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.		TRACE CK.

KDOT Graphics Certified 10-04-2021

KDOT Graphics Certified

Drawn By: : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401pss445-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	51	83

RECAPITULATION OF SIGNING & DELINEATION BID ITEMS

BID ITEMS	APPROXIMATE QUANTITIES		UNITS
SIGN (FLAT SHEET) (HIGH PERFORMANCE)			SQUARE FOOT
SIGN (REINFORCED PANEL) (HIGH PERFORMANCE)			SQUARE FOOT
SIGN (OVERLAY) (HIGH PERFORMANCE)			SQUARE FOOT
SIGN POST (4" x 6" WOOD) (FLAT SHEET SIGN)	159		LINEAR FOOT
SIGN POST (4" x 6" WOOD) (REINFORCED PANEL SIGN)	106		LINEAR FOOT
SIGN POST (2 LB/FT "U" STEEL)			LINEAR FOOT
SIGN POST (3 LB/FT "U" STEEL)			LINEAR FOOT
SIGN POST (1-3/4" PERFORATED SQUARE STEEL TUBE)			LINEAR FOOT
SIGN POST (2" PERFORATED SQUARE STEEL TUBE)			LINEAR FOOT
SIGN POST (2-1/4" PERFORATED SQUARE STEEL TUBE)			LINEAR FOOT
SIGN POST (2-1/2" PERFORATED SQUARE STEEL TUBE)			LINEAR FOOT
SIGN POST (4" X 6" STRUCTURAL STEEL)			LINEAR FOOT
SIGN POST (3 I 2.25 ALUMINUM)			LINEAR FOOT
	A36	A572(ALT)	
SIGN POST (W6X9 STEEL BEAM)			LINEAR FOOT
SIGN POST (W10X12 STEEL BEAM)			LINEAR FOOT
SIGN POST (W10X22 STEEL BEAM)			LINEAR FOOT
SIGN POST STUB WITH BREAKAWAY BASE PLATE (W6X9)			EACH
SIGN POST STUB WITH BREAKAWAY BASE PLATE (W10X12)			EACH
SIGN POST STUB WITH BREAKAWAY BASE PLATE (W10X22)			EACH
SIGN POST BREAKAWAY BASE PLATE (W6X9)			EACH
SIGN POST BREAKAWAY BASE PLATE (W10X12)			EACH
SIGN POST BREAKAWAY BASE PLATE (W10X22)			EACH
SIGN POST FOOTING (24" Dia. CONCRETE)(STEEL BEAM POST)			LINEAR FOOT
SIGN POST FOOTING (30" Dia. CONCRETE)(STEEL BEAM POST)			LINEAR FOOT
SIGN POST FOOTING (18" Dia. CONCRETE)(WOOD POST)			LINEAR FOOT
SIGN POST FOOTING (1-3/4" PERFORATED SQUARE STEEL TUBE)			EACH
SIGN POST FOOTING (2" PERFORATED SQUARE STEEL TUBE)			EACH
SIGN POST FOOTING (2-1/4" PERFORATED SQUARE STEEL TUBE)			EACH
SIGN POST FOOTING (2-1/2" PERFORATED SQUARE STEEL TUBE)			EACH
SIGNING OBJECT MARKER (TYPE 2)			EACH
SIGNING OBJECT MARKER (TYPE 3)			EACH
SIGNING DELINEATOR (TYPE A)(WHITE RIGID, "U" POST)			EACH
SIGNING DELINEATOR (TYPE A)(YELLOW RIGID, "U" POST)			EACH
SIGNING DELINEATOR (TYPE B)(WHITE RIGID, "U" POST)			EACH
SIGNING DELINEATOR (TYPE B)(YELLOW RIGID, "U" POST)			EACH
SIGNING DELINEATOR (TYPE A)(WHITE FLEXIBLE)(TYPE I ANCHOR)			EACH
SIGNING DELINEATOR (TYPE A)(YELLOW FLEXIBLE)(TYPE I ANCHOR)			EACH
SIGNING DELINEATOR (TYPE B)(WHITE FLEXIBLE)(TYPE I ANCHOR)			EACH
SIGNING DELINEATOR (TYPE B)(YELLOW FLEXIBLE)(TYPE I ANCHOR)			EACH
SIGNING DELINEATOR (TYPE A)(WHITE FLEXIBLE)(TYPE 3 ANCHOR)			EACH
SIGNING DELINEATOR (TYPE A)(YELLOW FLEXIBLE)(TYPE 3 ANCHOR)			EACH
SIGNING DELINEATOR (TYPE B)(WHITE FLEXIBLE)(TYPE 3 ANCHOR)			EACH
SIGNING DELINEATOR (TYPE B)(YELLOW FLEXIBLE)(TYPE 3 ANCHOR)			EACH

BID ITEMS	APPROXIMATE QUANTITIES	UNITS
SIGN (REMOVE AND RESET)	L.S.	L.S.

Note:
The contract bid for steel beam posts, stub posts, base plates, and footings will be based on A36 Grade steel quantities. When furnishing the A572 Grade alternate steel, the payment will be based on the equivalent A36 steel unit prices in the contract.

NO.	DATE	REVISIONS	BY	APP'D
2	10/01/19	Removed PSST coupler and changed the tables	D.D.G.	E.W.N.
1	7/23/10	Changed Bid Items as per Spec Book (2007)	D.D.G.	D.B.

KANSAS DEPARTMENT OF TRANSPORTATION

RECAPITULATION OF SIGNING & DELINEATION BID ITEMS

TE450 7/1/03

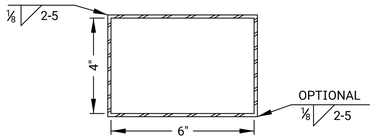
FHWA APPROVAL			10/01/2019	APP'D	Steven A. Buckley		
DESIGNED	D.D.G.	DETAILED	K.D.S.	QUANTITIES		TRACED	
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.		TRACE CK.	

KDOT Graphics Certified 10-04-2021

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA5554401pss450-01.dgn

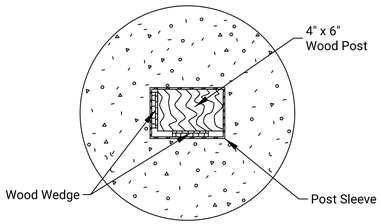
KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	52	83

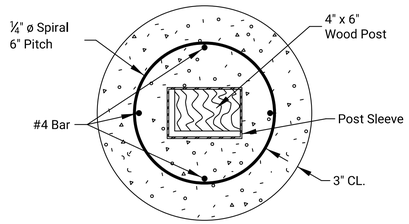


NOTE: Dimensions are to inside of post sleeve.

POST SLEEVE



SECTION A-A



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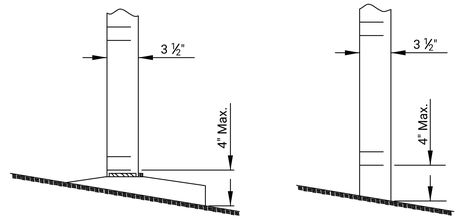


FRONT ELEVATION
CONCRETE FOOTING

FRONT ELEVATION
SOIL

NOTE TO THE ENGINEER:
The intent of the "AASHTO Roadside Design Guide" and these plans is to have a 4" or less projection above the finished ground line after impact.

BREAKAWAY CLEARANCE

GENERAL NOTES

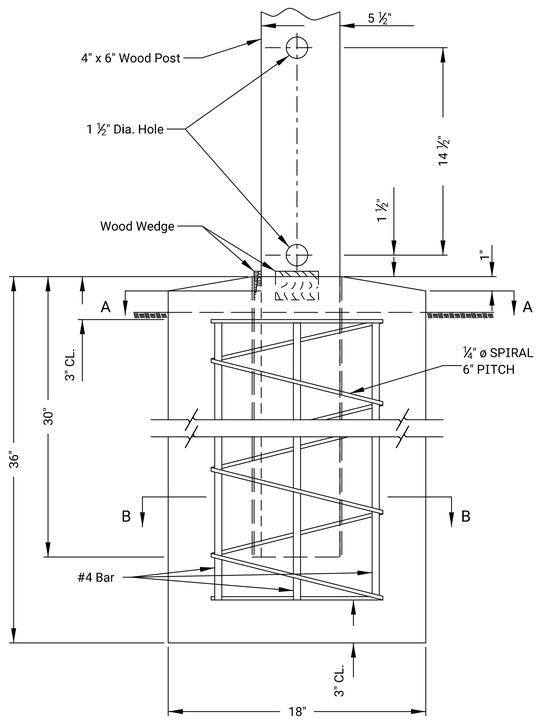
The post sleeve shall be formed from 10 gauge sheet steel to meet the requirements of ASTM A653 and zinc coated to meet the requirements of coating designation A123. If galvanized sheet steel is used, no other galvanization is required. It is permissible to close the bottom of the sleeve with a metal plate. Basis of acceptance shall be visual inspection of the finished sleeve and determination of zinc thickness by magnetic gage.

All sign mounting holes in the wood posts shall be drilled prior to treating.

Breakaway holes, field drilled sign mounting holes, and field cuts shall be treated in accordance with the preservative treatment specifications.

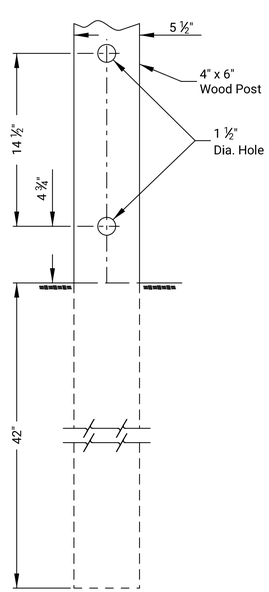
Prior to sealing the opening between the wood post and the top of the concrete footing, secure the post by placing 3" wide by 2" long wood wedges into the opening on two adjacent sides of the post. The wedges are be flush with up to a maximum of ⅜" sticking up above the top of the footing.

Commercial grade concrete may be substituted for sign support footings.



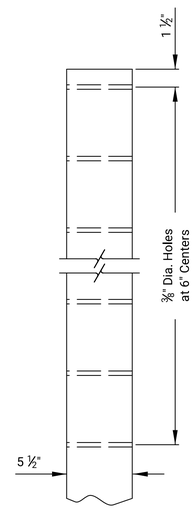
SIDE ELEVATION

WOOD POST IN CONCRETE FOOTING



SIDE ELEVATION

WOOD POST IN SOIL



SIGN POST

SIGN MOUNTING HOLES

All dimensions in inches unless otherwise noted.

NO.	DATE	REVISIONS	BY	APP'D
1	10/01/19	Change details and note	D.D.G.	E.W.N.

KANSAS DEPARTMENT OF TRANSPORTATION

DETAILS FOR WOOD POSTS

TE460 7/1/03

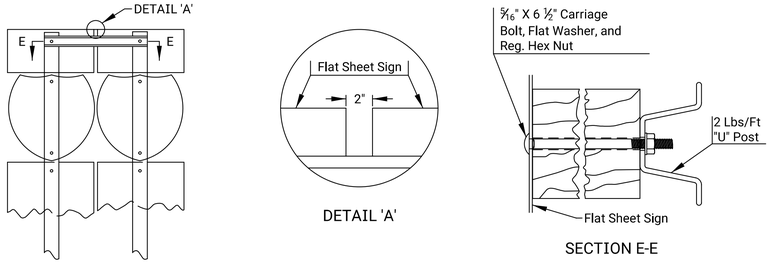
FHWA APPROVAL			10/01/2019	APP'D	Steven A. Buckley		
DESIGNED	D.D.G.	DETAILED	A.A.D.	QUANTITIES		TRACED	
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.		TRACE CK.	

KDOT Graphics Certified 09-27-2021

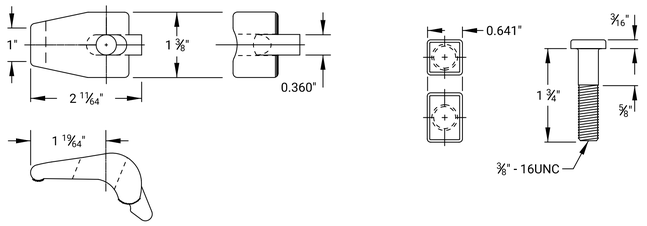
KDOT Graphics Certified

Drawn By: SJHorvatic Plotted: 12/10/2021
File: c:\wcipw\d0409707\KA555401pss460-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	53	83



ROUTE MARKER ASSEMBLIES ATTACHMENT



ALUMINUM POST CLIP AND POST CLIP BOLT

NOTES:

The top of the post shall not extend above the top of the sign.

When signs are mounted back to back, the signs shall be mounted at their prescribed height. In general installations, the bottom holes of the signs should be aligned. In order to prevent having to drill holes in the signs or posts, the sign on the back should be raised and positioned such that the holes are aligned. When a sign is mounted on the back of the R1-1 (Stop) sign, that sign is to be centered vertically on the R1-1 sign. When a sign is mounted on the back of the R1-2 (Yield) sign, the top holes of the signs should be aligned.

The primary sign and supplemental sign are to be mounted at their prescribed height, but under no circumstances shall the signs overlap each other. If the primary sign cannot be mounted without overlapping, then it shall be raised above the supplemental sign.

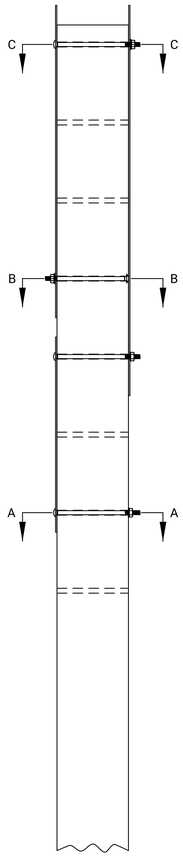
Any additional mounting holes, either through the sign or post, shall be drilled by the contractor. All holes drilled in the post shall be treated with a perservative. All holes drilled in the sign shall be free of any defects and the sheeting around the hole shall not be damaged.

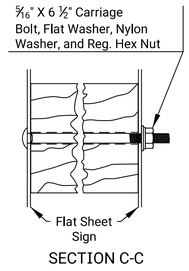
A nylon washer shall be placed against the sheeting when a nut is to be tightened against the sign face.

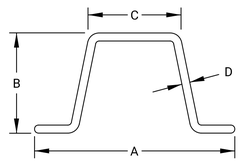
The 3 lb/ft steel "U" post used for reinforced panel sign installations is to be included in the bid item 'SIGN POST (4" x 6" WOOD) (REINFORCED PANEL SIGN)'.

When the 2 lb/ft steel "U" post is used for the route marker assemblies attachment, it shall be subsidiary to the bid item 'SIGN POST (4" x 6" WOOD) (FLAT SHEET SIGN)'.

The aluminum post clip bolt may have a rectangular head if the smaller dimension is equal to the square head dimension.



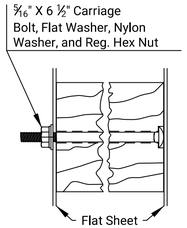


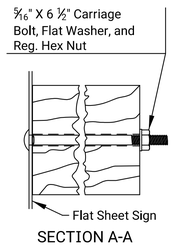


DIM.	2 LBS/FT	3 LBS/FT
A	3 1/8 "	3 1/2 "
B	1 17/32 "	1 3/4 "
C	1 1/4 "	1 5/8 "
D	1/8 "	9/64 "

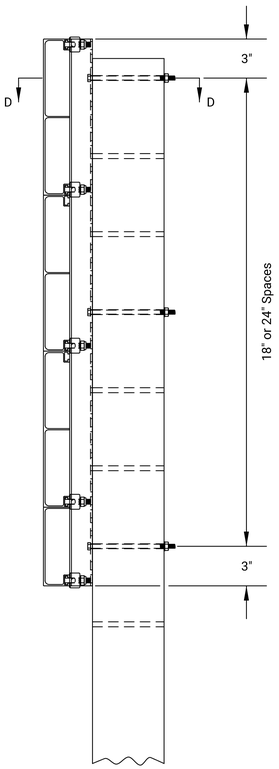
(DIMENSIONS ARE NOMINAL)

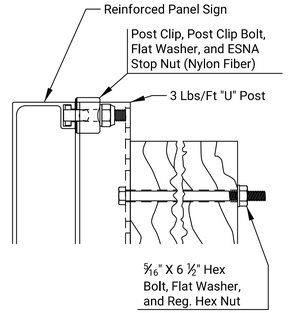
"U" POST

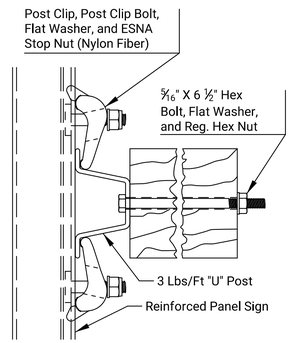




TYPICAL MOUNTING OF FLAT SHEET SIGNS







TYPICAL MOUNTING OF REINFORCED PANEL SIGNS

All dimensions are in inches

NO.	DATE	REVISIONS	BY	APP'D
1	10/01/19	Revised drawings and notes	D.D.G.	E.W.N.

KANSAS DEPARTMENT OF TRANSPORTATION

DETAILS FOR MOUNTING SIGNS ON WOOD POSTS

FLAT SHEET AND REINFORCED PANEL

TE481 7/1/03

FHWA APPROVAL			10/01/2019	APP'D	Steven A. Buckley		
DESIGNED	D.D.G.	DETAILED	A.A.D.	QUANTITIES		TRACED	
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.		TRACE CK.	

KDOT Graphics Certified 02-25-2021

KDOT Graphics Certified

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401pss481-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	54	83

DETAILED SPECIFICATIONS FOR FLAT SHEET SIGNS AND OVERLAY PANELS

All new flat sheet sign blanks shall be of the fabrication and thickness shown on the flat sheet blank detail sheets, unless other details are shown in the plans.

Flat sheet blanks shall be used for signs that are less than or equal to 7'-0" in length and/or less than or equal to 4'-0" in height, unless other details are shown in the plans. Flat sheet blanks shall also be used for signs that are 4'-0" in length and less than or equal to 8'-0" in height, unless other details are shown in the plans.

The design details for signs (color, letter height, and letter series) shall be as shown in the FHWA Standard Highway Signs and Markings book (2004 edition and supplements), unless other details are shown in the plans.

All sign faces shall be covered with Type IV high intensity retroreflective sheeting, unless otherwise noted in the plans.

The sheeting used for the direct applied legend and borders shall be Type IV high intensity retroreflective sheeting, unless otherwise noted in the plans.

The school warning signs, the "SCHOOL" portion of the S5-1 sign, S4-3p plaque, and any supplemental plaques used with these warning signs shall have a fluorescent yellow-green background, unless otherwise noted in the plans.

The type of adhesive used for retroreflective sheeting or lettering film shall be heat activated or pressure sensitive.

DETAILED SPECIFICATIONS FOR REINFORCED PANEL SIGNS

All new reinforced sign panels shall be of the fabrication and thickness shown on the reinforced panel detail sheets. If extrusheet fabricated sign panels are used, they shall be of the length, width and in the position shown. If extrusheet fabricated panel dimensions are not shown, a line of legend should be placed entirely on one panel. If extruded fabricated sign panels are used, either 1'-0" or 6" panels shall be used. The 6" panels shall be used only at the top or bottom of signs.

Reinforced panels shall be used for signs that are greater than 7'-0" in length or greater than 4'-0" in height, unless other details are shown in the plans.

All sign faces shall be covered with Type IV high intensity retroreflective sheeting, unless otherwise noted in the plans.

The sheeting used for the direct applied legend and borders shall be Type IV high intensity retroreflective sheeting, unless otherwise noted in the plans.

The type of adhesive used for retroreflective sheeting or lettering film shall be heat activated or pressure sensitive.

Letters and numbers on reinforced panel signs are modified Series "E" unless otherwise shown.

Spacing table dimensions are in inches.

NO.	DATE	REVISIONS	BY	APP'D
2	10/01/19	Changed notes	D.D.G.	E.W.N.
1	7/23/10	Changed Notes and Sheeting Type	D.D.G.	D.B.

KANSAS DEPARTMENT OF TRANSPORTATION

DETAILS SPECIFICATIONS FOR REINFORCED SIGN PANELS AND FLAT SHEET SIGNS

TE590 7/01/03

FHWA APPROVAL			10/01/2019	APP'D	Steven A. Buckley		
DESIGNED	D.D.G.	DETAILED	K.D.S.	QUANTITIES		TRACED	
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.		TRACE CK.	

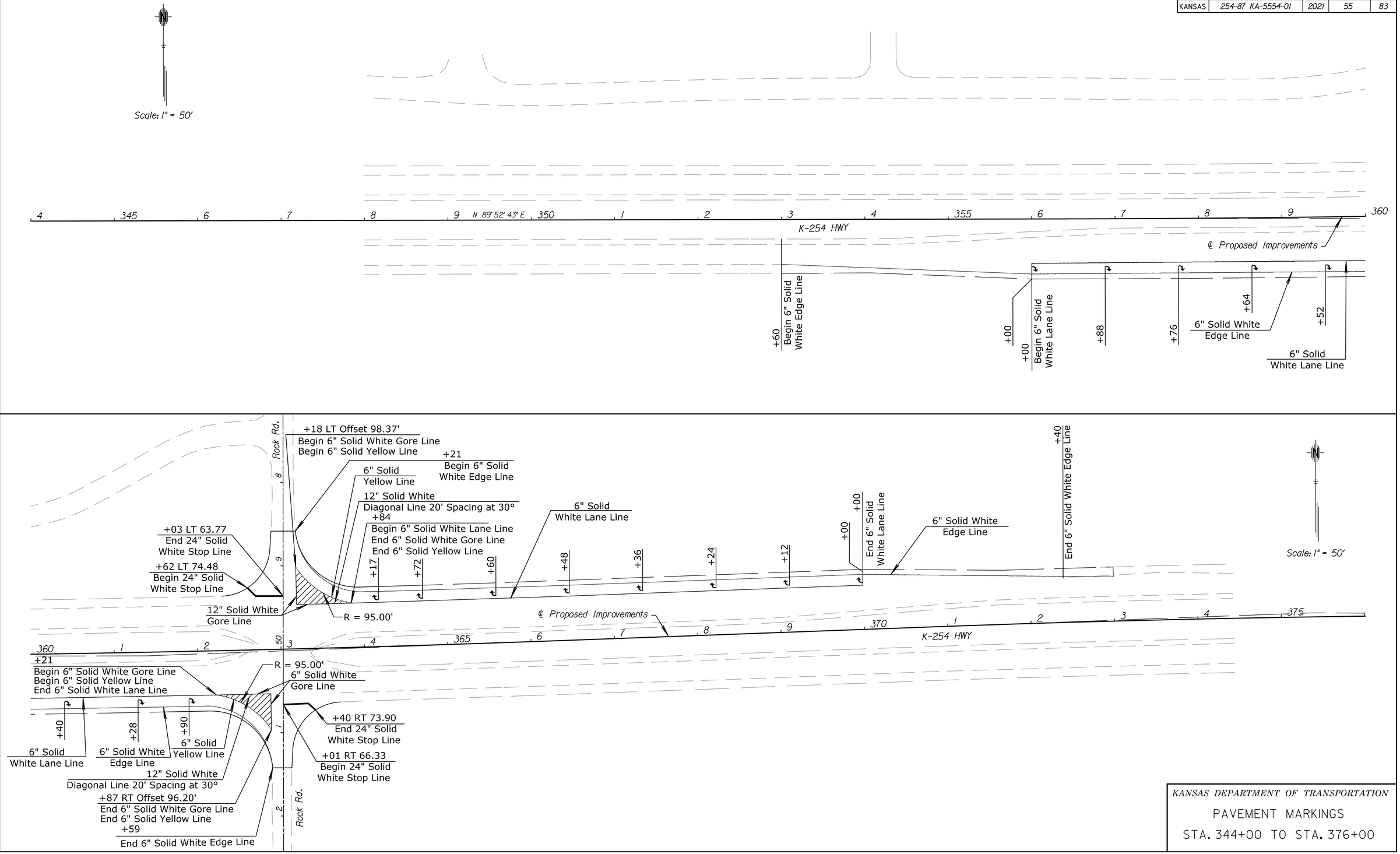
KDOT Graphics Certified 02-25-2021

KDOT Graphics Certified

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401pss590-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	55	83

DATE	BY	
		REFERENCES NOTED
		REFERENCES CHECKED



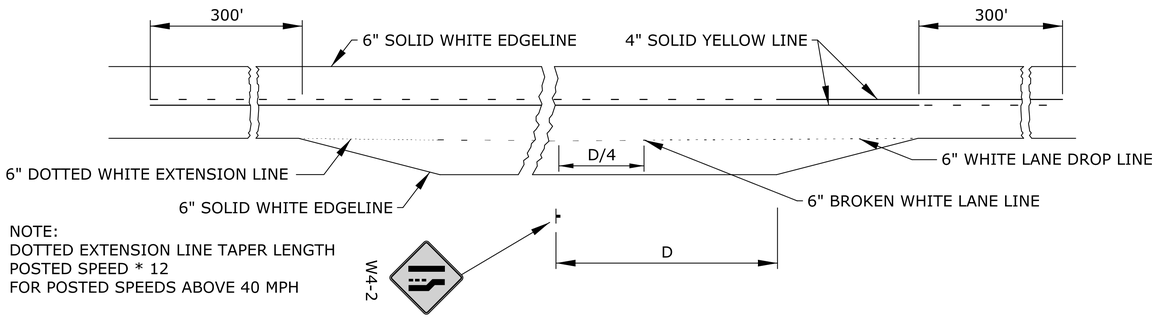
Drawn By : SJHorvatic
File : c:\wcipw\d0409707\KA555401mpl-01.dgn
Plotted : 12/10/2021

KANSAS DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKINGS

STA. 344+00 TO STA. 376+00

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	56	83

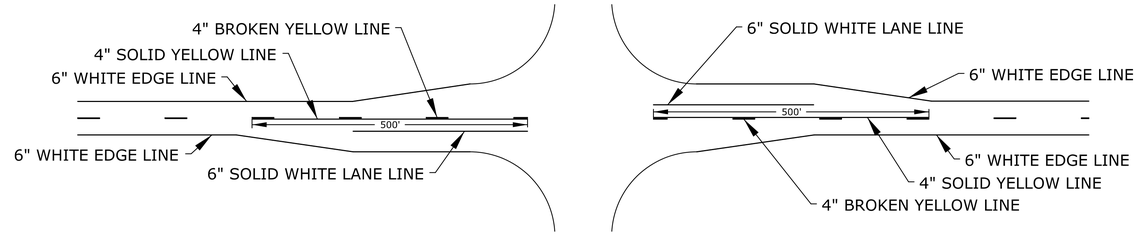


NOTE:
DOTTED EXTENSION LINE TAPER LENGTH
POSTED SPEED * 12
FOR POSTED SPEEDS ABOVE 40 MPH

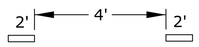
TYPICAL MARKING FOR AUXILIARY PASSING LANE

NOTE:
ALL PAVEMENT MARKINGS SHALL BE BROKEN AT CROSS ROADS.

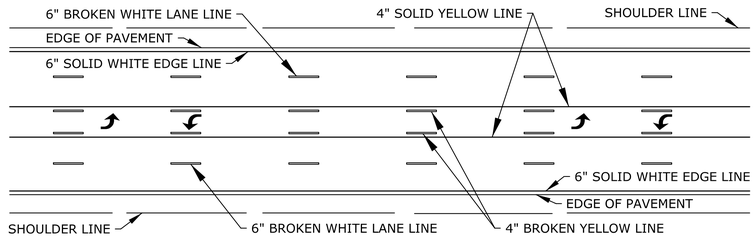
FOR HIGHWAY JUNCTIONS THE NO PASSING ZONE WILL EXTEND 1000' FROM INTERSECTION.



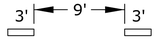
TYPICAL ROAD JUNCTION MARKINGS WITH BYPASS LANES



TYPICAL SPACING FOR DOTTED EXTENSION LINES, UNLESS OTHERWISE NOTED ON PLANS.

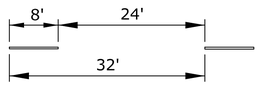


TWO-WAY LEFT TURN DETAIL FOR FIVE LANE ROADWAY

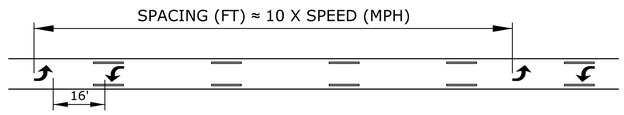


TYPICAL SPACING FOR LANE DROP. UNLESS OTHERWISE NOTED ON PLANS.

TWO-WAY LEFT TURN DETAIL FOR THREE LANE ROADWAY

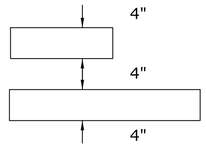


TYPICAL SPACING FOR BROKEN LINES UNLESS OTHERWISE NOTED ON PLANS

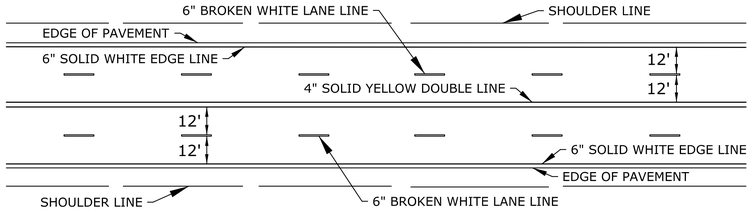


TWO-WAY LEFT TURN ARROW SPACING DETAIL

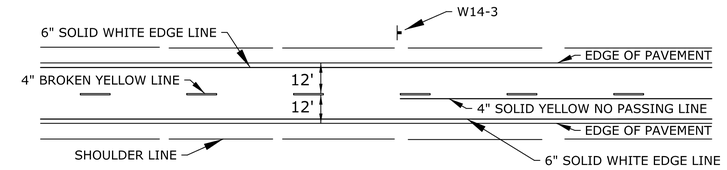
NOTE:
IF ARROWS ARE USED SPACE THE ARROWS AS SHOWN IN THE SPACING DETAIL.



TYPICAL SPACING FOR NO PASSING LINES UNLESS OTHERWISE NOTED ON PLANS



TYPICAL MARKINGS FOR FOUR LANE ROADWAY



TYPICAL TWO LANE MARKINGS

NOTE:
LONGITUDINAL PAVEMENT MARKING LINES SHALL BE OFFSET A MINIMUM OF 2" FROM LONGITUDINAL PAVEMENT JOINTS.

NOTE:
ON NON I, US, AND K ROUTES, 4" EDGE LINES MAY BE INSTALLED.
6" EDGE LINES ARE NOT REQUIRED ON NON I, US, AND K ROUTES.

NO.	DATE	REVISIONS	BY	APP'D
3	5/25/12	Added Dotted Extension and Lane Drop Lines	B.A.H.	B.D.G.
2	9/20/05	Removed Aux. Passing Lane Dotted Ext. Line	J.F.F.	B.D.G.
1	7/26/05	New FHWA Approval Date	J.F.F.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL PAVEMENT MARKING DETAILS FOR UNDIVIDED ROADWAYS

TE308

FHWA APPROVAL			5/25/2012	APP'D Brian D. Gower	
DESIGNED	J.F.F.	DETAILED	J.F.F.	QUANTITIES	TRACED
DESIGN CK.	B.D.G.	DETAIL CK.	B.D.G.	QUAN. CK.	TRACE CK.

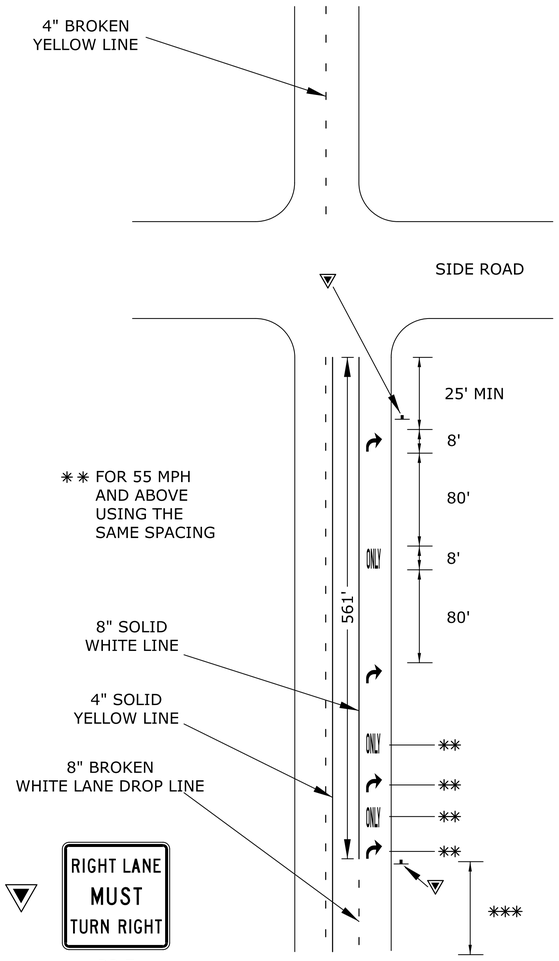
KDOT Graphics Certified 07-17-2018

KDOT Graphics Certified

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401mss308-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	57	83

TYPICAL SIGNING AND MARKING FOR RIGHT LANE MUST TURN RIGHT



✳✳ FOR 55 MPH AND ABOVE USING THE SAME SPACING

✳✳✳ THE LANE DROP MARKINGS LENGTH IS A MINIMUM OF 100' AND A MAXIMUM OF 250' PRIOR TO THE 8"SOLID WHITE LINE

RAILROAD CROSSING MARKING

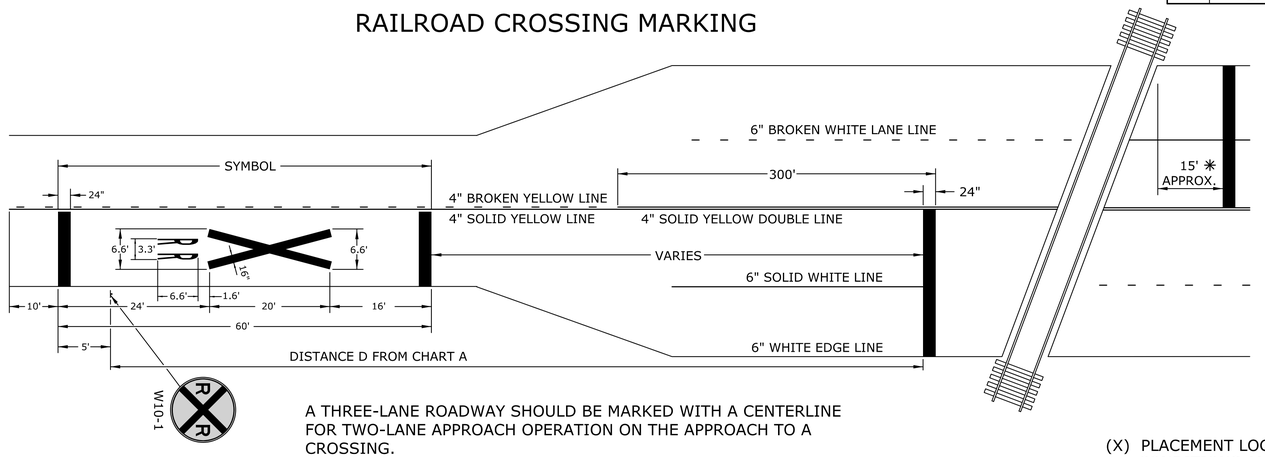


CHART "A"

SPEED MPH	DISTANCE D (feet)
75	850
70	750
65	650
60	550
55	450
50	375
45	300
40	225
35	150
30	(X)
25	(X)
20	(X)

ALL DISTANCES ARE MINIMUM.

A THREE-LANE ROADWAY SHOULD BE MARKED WITH A CENTERLINE FOR TWO-LANE APPROACH OPERATION ON THE APPROACH TO A CROSSING.
ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL R X R SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.
REFER TO STANDARD ALPHABET FOR HIGHWAY SIGNS AND MARKINGS FOR R X R SYMBOLS DETAILS.

*STOP LINE 8' FROM NEAR EDGE OF GATE OR CANTILEVER, IF PRESENT.

NOTE:
ON NON I, US, AND K ROUTES, 4" EDGE LINES MAY BE INSTALLED.
6" EDGE LINES ARE NOT REQUIRED ON NON I, US, AND K ROUTES.

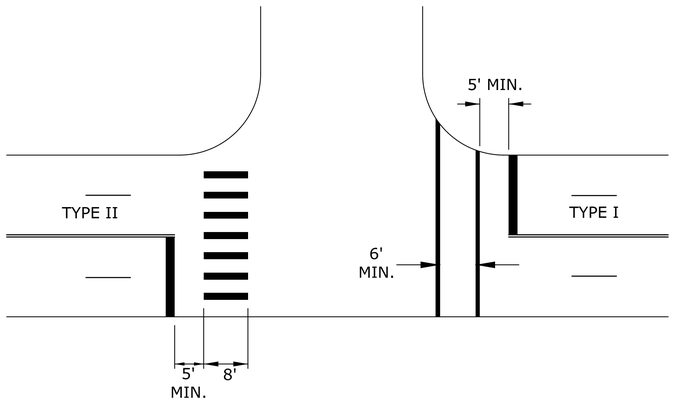
(X) PLACEMENT LOCATION IS DEPENDENT ON SITE CONDITIONS AND OTHER SIGNING TO PROVIDE ADEQUATE ADVANCE WARNING TO THE DRIVER

TYPICAL CROSSWALKS

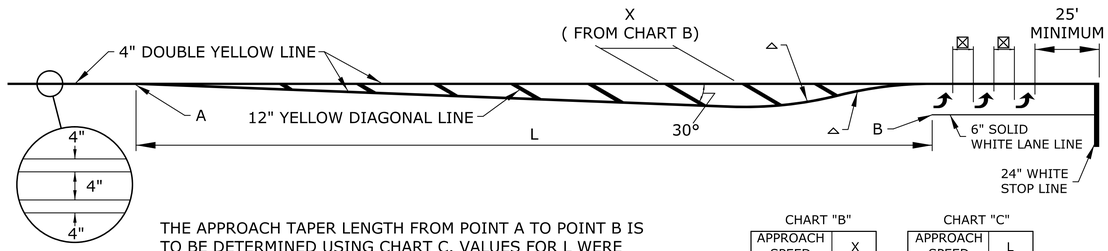
TYPE I: CROSSWALK LINES SHALL BE 12" SOLID WHITE LINES. THEY SHALL BE SPACED A MINIMUM OF 6' APART FROM INSIDE EDGE TO INSIDE EDGE.

TYPE II: THESE LINES SHOULD BE SOLID WHITE 24" WIDE PLACED PARALLEL TO THE DIRECTION OF TRAFFIC FLOW. THE LINE PLACEMENT IS DETERMINED BY LANE LINE,CENTER LINE, AND WHEEL PATH IN SUCH A MANNER AS TO MINIMIZE TRAFFIC WEAR. THE CROSSWALK WIDTH SHOULD BE NOT LESS THAN 8'. THE TRANSVERSE CROSSWALK LINES MAY BE ADDED.

WHEN REQUIRED, STOP LINES SHALL BE INSTALLED A MINIMUM OF 5' FROM CROSSWALKS.



TYPICAL APPROACH TAPER DETAIL



THE APPROACH TAPER LENGTH FROM POINT A TO POINT B IS TO BE DETERMINED USING CHART C. VALUES FOR L WERE CALCULATED USING THE EQUATIONS BELOW AND INCREASED TO THE NEXT HIGHER 5 MPH INCREMENT.

- SPEEDS < 45 MPH $L = \frac{W*S^2}{60}$
- SPEEDS = 45 MPH $L = W*S$

IF ARROWS ARE USED AND UNLESS OTHERWISE SPECIFIED THE SPACE BETWEEN LINES SHOULD BE AT LEAST FOUR TIMES THE HEIGHT OF THE CHARACTERS FOR LOW SPEED ROADS BUT NOT MORE THAN TEN TIMES THE HEIGHT OF THE CHARACTERS, UNDER ANY CONDITIONS.

FOR SPEEDS LESS THAN OR EQUAL TO 40 MPH, R=150'.
FOR SPEEDS GREATER THAN OR EQUAL TO 45 MPH, R=300'.

CHART "B"

APPROACH SPEED	X
20 MPH	20'
25 MPH	25'
30 MPH	30'
35 MPH	35'
40 MPH	40'
45 MPH	45'
50 MPH	50'
55 MPH	55'
60 MPH	60'
65 MPH	65'
70 MPH	70'

CHART "C"

APPROACH SPEED	L
20 MPH	80'
25 MPH	125'
30 MPH	180'
35 MPH	245'
40 MPH	320'
45 MPH	540'
50 MPH	600'
55 MPH	660'
60 MPH	720'
65 MPH	780'
70 MPH	840'

NO.	DATE	REVISIONS	BY	APP'D
3	5/25/12	Updated Chart B and Lane Drop Lines	B.A.H.	B.D.G.
2	10/20/06	RR Xing Symbol Changed from 18' to 16'	T.L.H.	B.D.G.
1	9/20/05	Added 4' Solid Yellow Double Line to RRxing	J.F.F.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL MISCELLANEOUS PAVEMENT MARKING DETAIL SHEET

TE309

FHWA APPROVAL		7/26/2005	APP'D	Brian D. Gower	
DESIGNED	J.F.F.	DETAILED	J.F.F.	QUANTITIES	TRACED
DESIGN CK.	B.D.G.	DETAIL CK.	B.D.G.	QUAN. CK.	TRACE CK.

KDOT Graphics Certified 12-07-2020

Drawn By : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA555401mss309-01.dgn

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	58	83

SUMMARY OF PAVEMENT MARKINGS

LOCATION	4" Solid WHITE Edge Line	6" Solid WHITE Edge Line	6" Broken WHITE Lane Line	6" Broken WHITE Lane Line (PCP)	6" Dotted WHITE Extension Line	6" Broken WHITE Lane Drop Line	6" Solid WHITE Lane Line	8" Broken WHITE Lane Drop Line	6" Solid WHITE Gore Line	8" Dotted WHITE Extension Line	12" Solid WHITE Diagonal Line	12" Solid WHITE Chevron Line	12" Solid WHITE Type I Crosswalk Line	24" Solid WHITE Type II Crosswalk Line	24" Solid WHITE Stop Line	4" Solid YELLOW Edge Line	4" Solid YELLOW Double Line	4" Solid YELLOW Line	4" Broken YELLOW Line	6" Solid YELLOW Edge Line	12" Solid YELLOW Diagonal Line
K-254																					
Sta. 343+28.43 - Sta. 379+90.05		1,929					1,223		223		329				89					165	
TOTALS		1,929					1,233		223		329				89					165	

RECAPITULATION OF QUANTITIES

ITEMS	TOTAL	UNITS
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(4")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(6")	3,385	FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(8")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(12")	329	FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(4")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(6")	165	FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(12")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(4")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(6")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(8")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(12")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(4")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(6")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(12")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(4")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(6")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(8")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(12")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(4")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(6")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(12")		FT
PAVEMENT MARKING (INTERSECTION GRADE)(WHITE)(12")		FT
PAVEMENT MARKING (INTERSECTION GRADE)(WHITE)(24")	89	FT
PAVEMENT MARKING (INTERSECTION GRADE)(YELLOW)(12")		FT
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)(RIGHT ARROW)	16	EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)(ONLY)		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(US-SHIELD)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(K-SHIELD)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(I-SHIELD)( )		EACH
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(6")		FT
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(8")		FT
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(12")		FT
PAVEMENT MARKING REMOVAL		FT

SUMMARY OF WORD & SYMBOL MARKINGS

LOCATION	STOP	ONLY	X-ING	SCHOOL	70	435	24	400	18
K-254									
Sta. 343+28.43 - Sta. 379+90.05 EB									
Sta. 343+28.43 - Sta. 379+90.05 WB									
TOTALS									

LOCATION				8																	
K-254																					
Sta. 343+28.43 - Sta. 379+90.05 EB				8																	
Sta. 343+28.43 - Sta. 379+90.05 WB				8																	
TOTALS				16																	

NOTE: FOR SPECIFIC PAVEMENT MARKING DETAILS AND DIMENSIONS SEE PLAN SHEETS

NOTE: ALL TOTALS REFLECT ACTUAL QUANTITY OF PAVEMENT MARKING MATERIALS REQUIRED.

NOTE:
WORDS & SYMBOLS SHALL CONFORM TO THE LATEST EDITION OF "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" PRINTED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

PRIOR TO COMMENCEMENT OF PAVEMENT MARKING WORK THE ENGINEER WILL ESTABLISH THE LIMITS FOR "NO PASSING" ZONES. THESE LIMITS SHALL BE USED FOR THE LOCATION OF "NO PASSING" LINES AND FOR THE COMPUTATION OF ACTUAL MARKING QUANTITIES FOR THIS LINE TYPE.

NO.	DATE	REVISIONS	BY	APP'D
2	5/25/12	Added Line Types, Symbols, and Shields	B.A.H.	B.D.G.
1	7/26/05	New FHWA Approval Date	J.F.F.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY AND RECAPITULATION OF PAVEMENT MARKING QUANTITIES

TE311

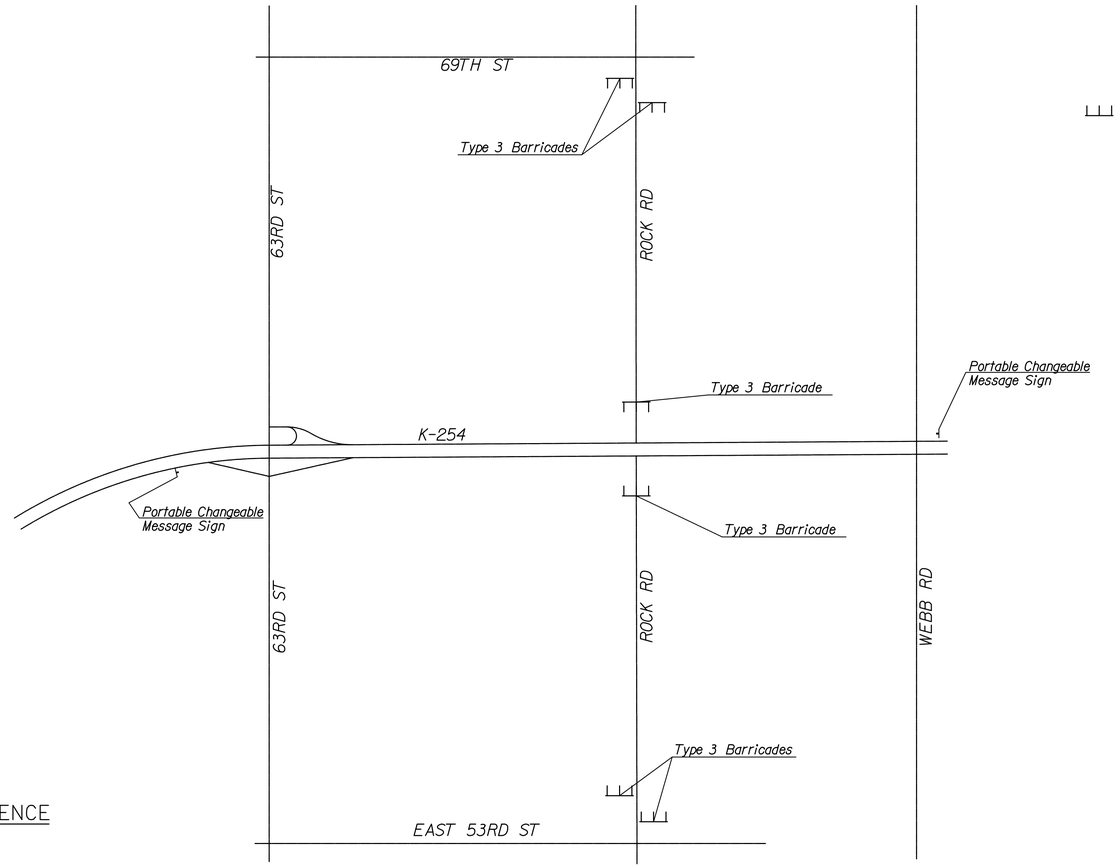
FHWA APPROVAL			5/25/2012	APP'D	Brian D. Gower
DESIGNED	J.F.F.	DETAILED	J.F.F.	QUANTITIES	TRACED
DESIGN CK.	B.D.G.	DETAIL CK.	B.D.G.	QUAN. CK.	TRACE CK.

KDOT Graphics Certified 12-10-2021

KDOT Graphics Certified

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA5554401mss311-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	59	83



LEGEND

TYPE 3 BARRICADE

NOT TO SCALE

CONSTRUCTION SEQUENCE

LOCATION	SEQUENCE 1	SEQUENCE 2	SEQUENCE 3	REMARKS
Mainline - K-254 Sta. 343+00.00 to Sta. 380+00.00	Traffic on Existing K-254 Using advanced warning signs and PCMS. Close outside lane in each direction using TE 744. Construct Grading and Drainage: K-254 Sta. 358+20.00 Extend 7' x 4' RCB Rt. K-254 Sta. 364+14.85 Extend 15" x 86' CRP (RCP) Lt. K-254 Sta. 370+67.23 Extend 15" x 78' CRP (RCP) Lt.	Traffic on Existing K-254 Close left turn lanes for Rock Rd. Using advanced warning signs and PCMS. Close outside lane in each direction using TE 744. Construct Grading, Drainage, and Surfacing: EB K-254 and N. Rock Rd. S. Intersection Sta. 361+57.12 to Sta. 363+71.94. WB K-254 and N. Rock Rd. N. Intersection Sta. 362+25.13 to Sta. 364+50.93.	Traffic on Existing K-254 Close outside lane in each direction using TE 744. Construct Grading, Drainage, and Surfacing: K-254 Sta. 353+55.00 to Sta. 361+62.20 EB Right Turn Lane. K-254 Sta. 364+45.93 to Sta. 372+45.00 WB Right Turn Lane.	Sequences 2 and 3 may be worked on simultaneously by contractor with Engineer approval. Contractor may elect to leave traffic control in place overnight. Contractor to place 3:1 wedge at pavement drop offs against traveled lanes during non work hours.
Sideroads Rock Rd.	Access to Rock Rd. from K-254 Closed Rock Rd. closed to thru traffic. Temporary signing shown on -rcs-02 Construct Grading and Drainage: Rock Rd. Sta. 49+01.90 Extend 8' x 3' RCB Lt. & Rt.	Access to Rock Rd. from K-254 Closed Rock Rd. closed to thru traffic. Temporary signing shown on -rcs-02 Construct Grading, Drainage, and Surfacing: Rock Rd. Sta. 48+53.44 to Sta. 51+47.22	Access to Rock Rd. from K-254 Closed Rock Rd. closed to thru traffic. Temporary signing shown on -rcs-02	
Entrances	All residential and commercial entrances on Rock Rd. to remain open.	All residential and commercial entrances on Rock Rd. to remain open.	All residential and commercial entrances on Rock Rd. to remain open.	

GENERAL NOTES: Contractor to set up changeable message signs prior to road closure and remain in place for the duration of the closure. KDOT will provide message sign 2 weeks prior to construction. Contractor to coordinate with KDOT for swapping out signs.

Use TE700 and TE744 for sign spacing.
Use spacing for Expressway/Freeway.
See Sh. No. 63 and 70.

KANSAS DEPARTMENT OF TRANSPORTATION

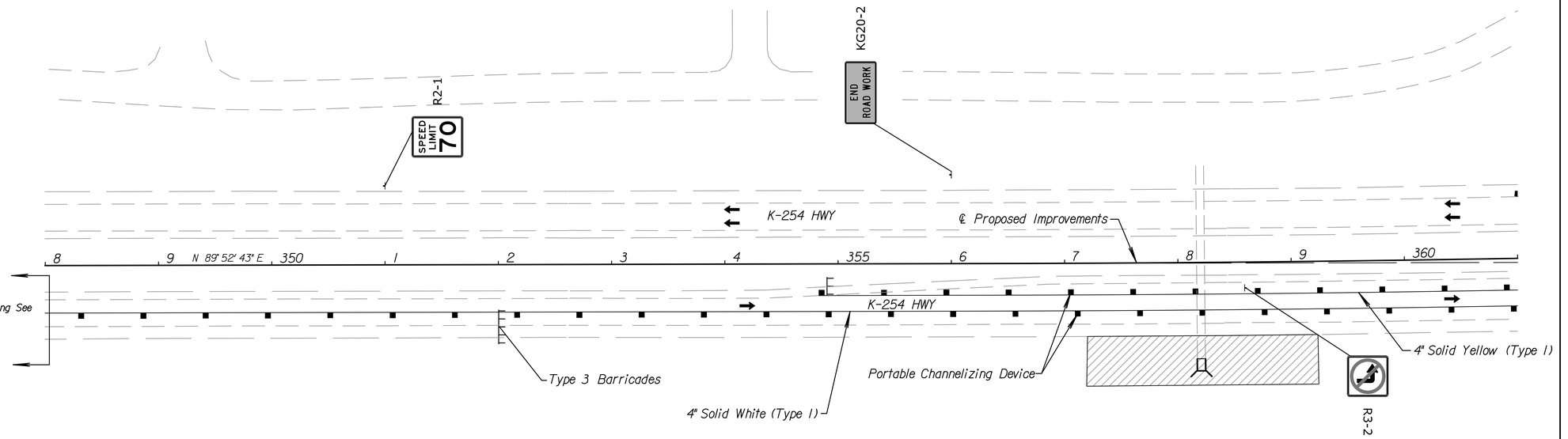
CONSTRUCTION SEQUENCE

DATE	BY	
		REFERENCES NOTED
		REFERENCES CHECKED

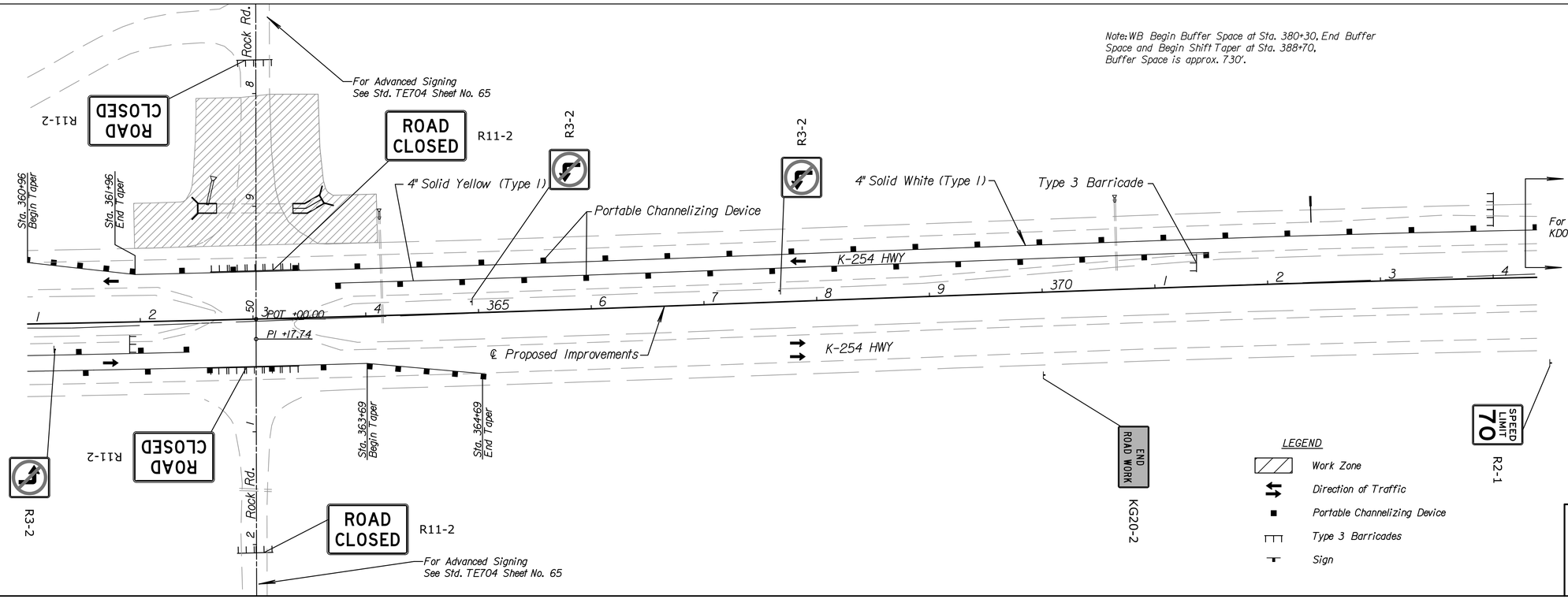
Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401rcs-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	60	83

Scale: 1" = 50'



Note: EB Begin Shift Taper at Sta. 337+30, End Shift Taper and Begin Buffer Space at Sta. 345+70, Buffer Space is approx. 730'.



Note: WB Begin Buffer Space at Sta. 380+30, End Buffer Space and Begin Shift Taper at Sta. 388+70, Buffer Space is approx. 730'.

LEGEND

- Work Zone
- Direction of Traffic
- Portable Channelizing Device
- Type 3 Barricades
- Sign

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
PHASE I SEQUENCE I
STA. 348+00 TO STA. 374+00

60

DATE	BY	REFERENCES NOTED
		REFERENCES CHECKED

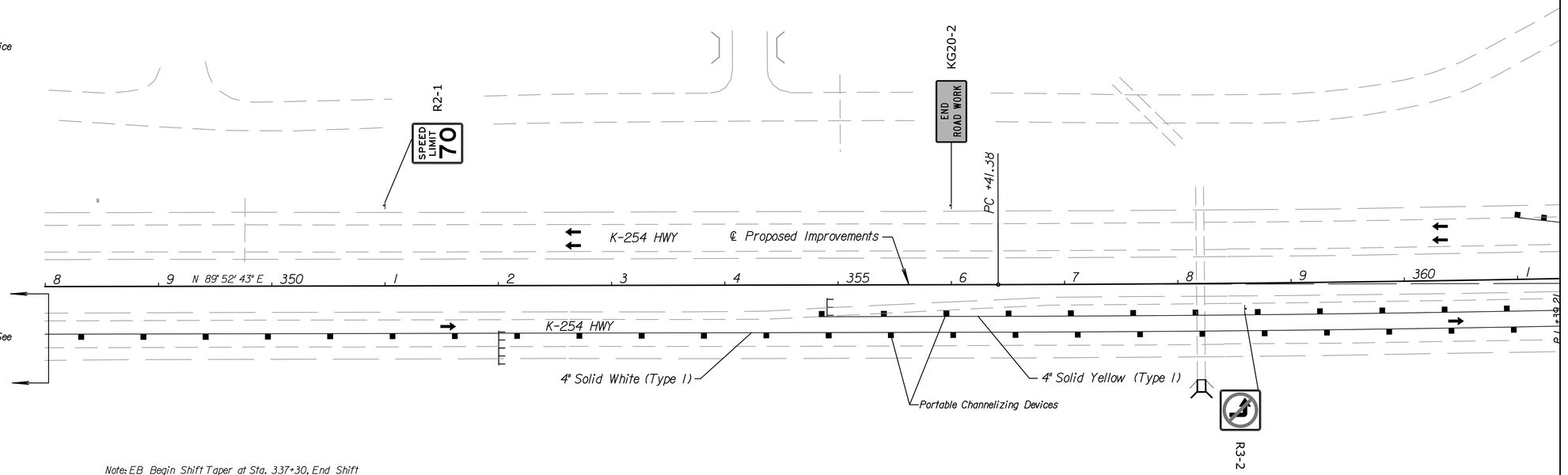
Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipwld\0409707\KA5554401cpl-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	61	83

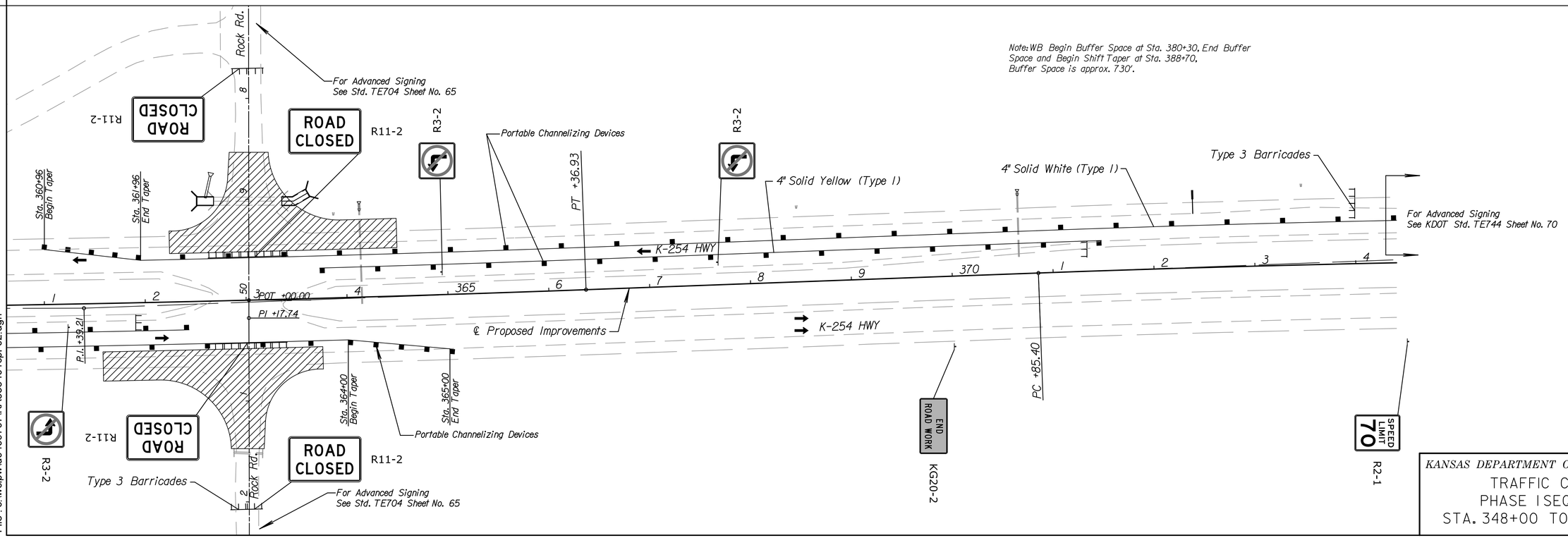
LEGEND

- Work Zone
- Direction of Traffic
- Portable Channelizing Device
- Type 3 Barricades
- Sign

Scale: 1" = 50'



Note: EB Begin Shift Taper at Sta. 337+30, End Shift Taper and Begin Buffer Space at Sta. 345+70, Buffer Space is approx. 730'.



Note: WB Begin Buffer Space at Sta. 380+30, End Buffer Space and Begin Shift Taper at Sta. 388+70, Buffer Space is approx. 730'.

KANSAS DEPARTMENT OF TRANSPORTATION

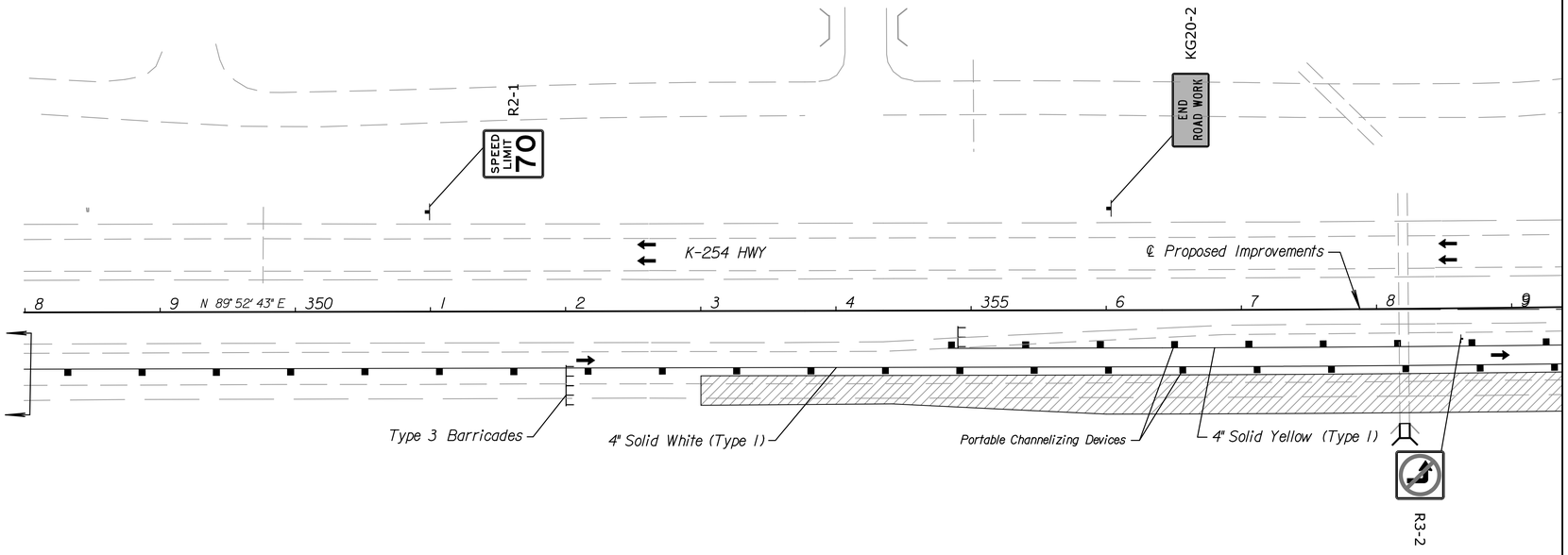
TRAFFIC CONTROL
PHASE I SEQUENCE 2
STA. 348+00 TO STA. 374+00

DATE	BY	REFERENCES NOTED
		REFERENCES CHECKED

Drawn By : SJHorvatic
File : c:\wcipw\d0409707\KA5554401cpl-02.dgn
Plotted : 12/10/2021

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	62	83

Scale: 1" = 50'



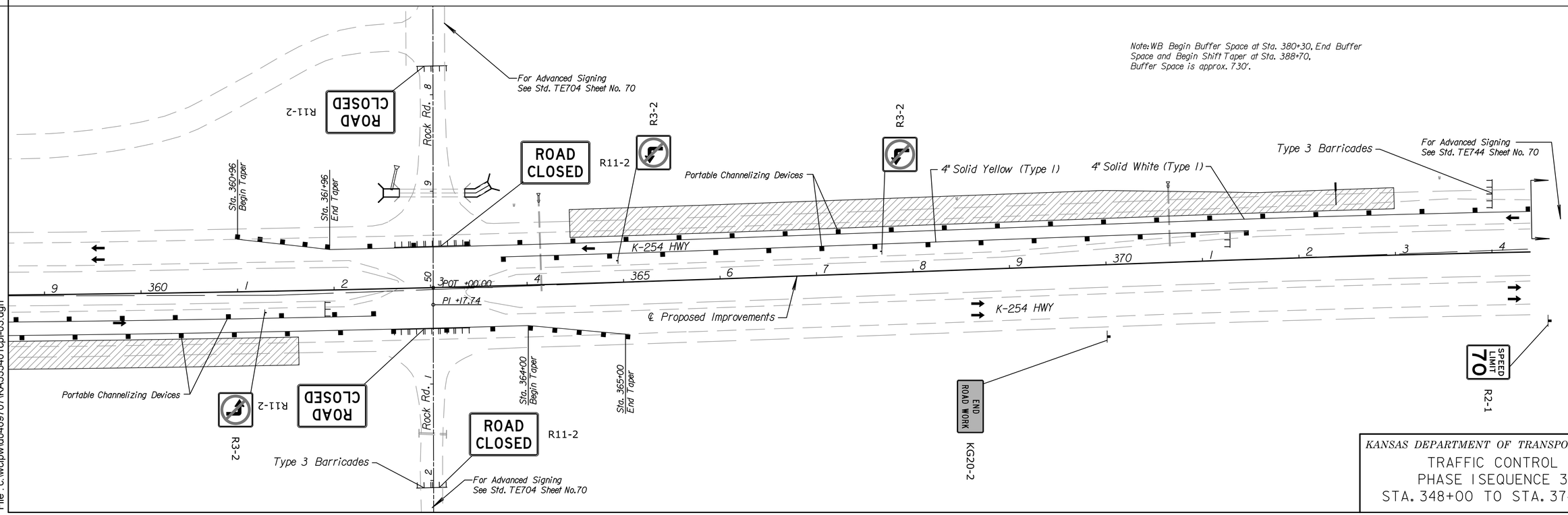
For Advanced Signing and Temp Pavement Marking See KDOT Sts. TE744 Sheet No. 70

LEGEND

- Work Zone
- Direction of Traffic
- Portable Channelizing Device
- Type 3 Barricades
- Sign

Note: EB Begin Shift Taper at Sta. 337+30, End Shift Taper and Begin Buffer Space at Sta. 345+70. Buffer Space is approx. 730'.

Note: WB Begin Buffer Space at Sta. 380+30, End Buffer Space and Begin Shift Taper at Sta. 388+70. Buffer Space is approx. 730'.



DATE	BY	
		REFERENCES NOTED
		REFERENCES CHECKED

Drawn By : SJHorvatic
Plotted : 12/10/2021
File : c:\wcipwld0409707\KA5554401cpl-03.dgn

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
PHASE I SEQUENCE 3
STA. 348+00 TO STA. 374+00

1) Design Speed: Those items delegated to temporary traffic control should be designed and installed using the posted/legal speed of the roadway prior to work starting.

2) Minimum Lane Width: Lane widths shall be a minimum of 11' (measured between centerlines of pavement markings) or as shown on the plans, or as directed by the engineer. A lane width less than 11' may require restricted roadway width signing.

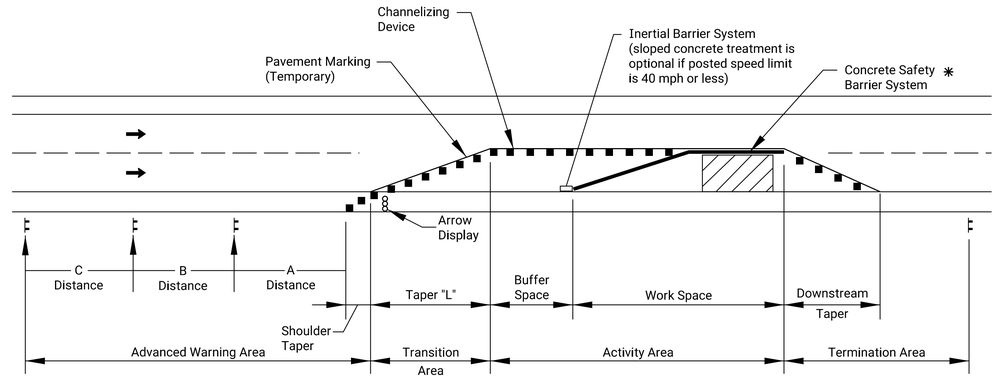
3) Consideration should be made to separate pedestrian and, if needed, bicycle movements from both work site activity and vehicular traffic. Unless a reasonable safe route that does not involve crossing the roadway can be provided, pedestrians should be appropriately directed with advance signing that encourages them to cross to the opposite side of the roadway. In urban and suburban areas with high vehicular traffic volumes, these signs should be placed at intersections (rather than midblock locations) so that pedestrians are not confronted with midblock work sites that will induce them to attempt skirting the work site or making a midblock crossing.

4) When existing pedestrian facilities are disrupted, closed, or relocated, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.

5) When the driving surface open to traffic is milled or is a temporary surface made of loose material, or when directed by the engineer a W8-15 (Grooved Pavement) or W8-7 (Loose Gravel) sign shall be used on mainline approaches. This sign should be placed a "C" distance after the W20-1 (Road Work Ahead) sign. A W8-15p motorcycle plaque shall be used to supplement the W8-15 or W8-7 signs. All signs shall be displayed as long as the condition is present.

6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 785-296-1183.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	63	83



TYPICAL WORK ZONE COMPONENTS

✳ When concrete barrier system is used, portable channelizing devices are not needed along the tangent barrier section.

Minimum advance warning sign spacing (in feet):

SPEED (MPH) ✳	*A*	*B*	*C*
URBAN (40 MPH OR LOWER)	*100*	*100*	*100*
URBAN (45 MPH OR HIGHER)	*350*	*350*	*350*
RURAL (55 MPH OR LOWER)	*500*	*500*	*500*
RURAL (60 MPH OR HIGHER)	*750*	*750*	*750*
EXPRESSWAY/FREEWAY	*1000*	*1500*	*2640*

✳ Posted speed prior to work starting

The minimum spacing between signs shall be no less than 100', unless directed by the engineer.

The spacing between any signs may be increased beyond the minimum values in the table above as approved by the engineer in order to maximize visibility.

Taper Formulas:

L = WS for speeds of 45 MPH or more

$L = WS^2/60$ for speeds of 40 MPH or less

Where: L = Minimum length of taper in feet
S = Numericial value of posted speed prior to work starting in MPH
W = Width in offset feet

Shifting Taper=1/2 L
Shoulder Taper=1/3 L

Channelizer Placement:

(1) The spacing between devices in transition area (taper) should not exceed a distance in feet equal to 1/2 the posted speed limit in mph prior to work starting.

(2) The spacing between devices in the advanced warning area and the activity area should not exceed a distance in feet equal to two times the posted speed limit in mph prior to work starting.

(3) Channelizing devices shall be placed for optimum visibility, normally at right angles to the traffic flow.

(4) Place directional indicator barricades in series to direct traffic onto the new path. The arrow sign should not be visible to opposing traffic.

(5) Alternating diagonal orange and white striping must slope downward in the direction traffic is expected to pass.

Buffer Space

SPEED (MPH) ✳	*20*	*25*	*30*	*35*	*40*	*45*	*50*	*55*	*60*	*65*	*70*	*75*
LENGTH (ft)	*115*	*155*	*200*	*250*	*305*	*360*	*425*	*495*	*570*	*645*	*730*	*820*

✳ Posted speed prior to work starting

Neither work activity nor storage of equipment, vehicles, or material should occur in the buffer space. When a protection vehicle is placed in advance of the work space, only the space upstream of the vehicle constitutes the buffer space.

If temporary concrete safety barrier system is used to separate approaching traffic from the work space, the barrier system shall be considered part of the activity area. A full lane width should be available throughout the length of the buffer space. See typical work zone components above.

NO.	DATE	REVISIONS	BY	APP'D
3				
2	03/13/18	W8-15p usage changed to Shall	R.W.B.	E.G.K.
1	08/18/15	Channelizer spacing info	R.W.B.	K.E.

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
GENERAL NOTES

TE700

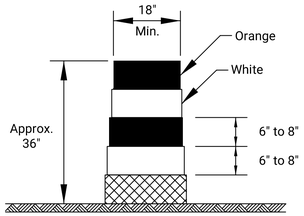
FHWA APPROVAL		03/13/18	APP'D	Eric Kocher	
DESIGNED	B.A.H.	DETAILED	R.W.B	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

KDOT Graphics Certified 11-02-2020

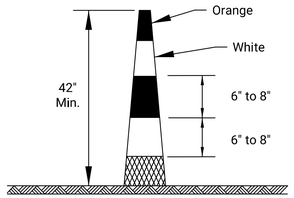
KDOT Graphics Certified

Drawn By : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA555401css700-01.dgn

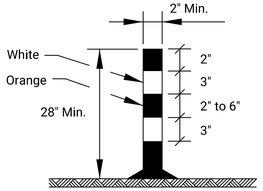
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	64	83



DRUM

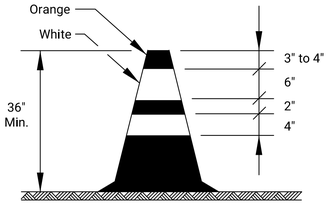


CONICAL DELINEATOR

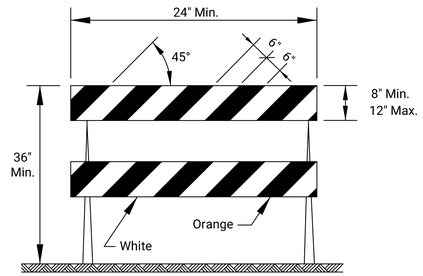


TUBULAR MARKER

Striping as shown for up to 42".

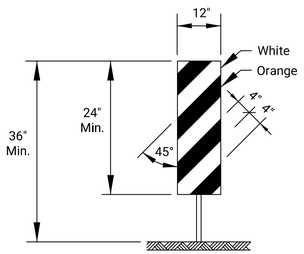


TRAFFIC CONE



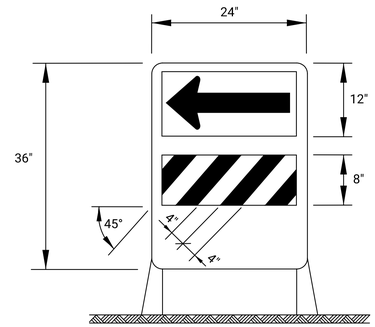
TYPE 2 BARRICADE

For rails less than 36" long, 4" wide stripes may be used. All stripes shall slope downward to the traffic side for channelization.



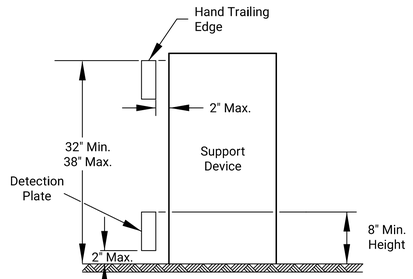
VERTICAL PANEL

The stripes shall slope downward to the traffic side for channelization.



DIRECTION INDICATOR BARRICADE

The stripes shall slope downward in the direction traffic is to pass. The direction indicator barricade shall be used in series to direct the motorist into the intended lane of travel.



PEDESTRIAN CHANNELIZER

1. Support device shall not project beyond the detection plate into the pathway.
2. Hand trailing edges and detection plates are optional for continuous walls.
3. Interconnect pedestrian channelizers to prevent displacement and to provide continuous guidance through or around work.
4. Alternate pathways shall be firm, stable, and slip resistant.
5. Treat height differentials > 1/2" in the surfaces of alternate paths with a firm, stable, and slip resistant temporary ramp having a slope of 12:1 or flatter and having a width equal to the alternate path.
6. Use alternating orange/white on interconnected devices.

Item	Location	Cross-overs	Shoofly Diversions	Tangents	Tapers	Ramps	Head to Head	Object Identifier	Lead-in Devices	Gores
Portable										
	Drums	Yes	Yes	Yes	Yes	Yes	(1)	Yes	Yes	Yes
	Conical Delineators	Yes	Yes	Yes	Yes	Yes	(1)	Yes	Yes	Yes
	Vertical Panels	(2)	(2)	(2)	(2)	(2)	(1,2)	Yes	(2)	(2)
	Direction Indicator Barricade	No	No	No	Yes	No	No	No	No	No
	Type 2 Barricade	(2)	(2)	(2)	(2)	No	No	Yes	No	No
	Traffic Cones	No	No	(4)	(4)	(4)	No	(4)	(4)	(4)
Fixed										
	Tubular Markers	(3)	(3)	(3)	No	(3)	Yes	No	Yes	Yes
	Vertical Panels	(3)	(3)	(3)	(3)	(3)	(3)	Yes	(2,3)	(2)

(1) Not allowed on centerline delineation along freeways or expressways.
(2) The stripes shall slope downward to the traffic side for channelization.
(3) May be used upon the approval of the engineer.
(4) Daytime operations only.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
CHANNELIZING DEVICES

TE702

FHWA APPROVAL		06/01/15	APP'D Kristina Ericksen	
DESIGNED	L.E.R.	DETAILED R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.	QUAN. CK.	TRACE CK.

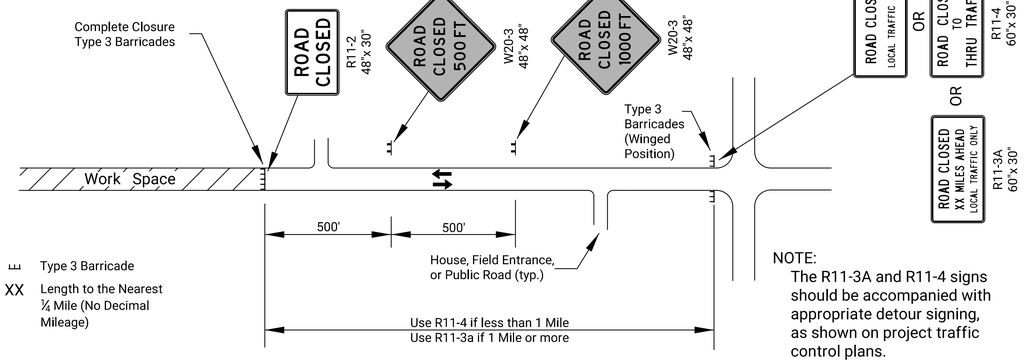
KDOT Graphics Certified 11-02-2020

KDOT Graphics Certified

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401css702-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	65	83

Note: Signs shown for one approach to work zone.



NOTE:
The R11-3A and R11-4 signs should be accompanied with appropriate detour signing, as shown on project traffic control plans.

FIGURE 1: TYPICAL SIGNING FOR ROAD CLOSURE (MAINLINE OR SIDE ROAD)

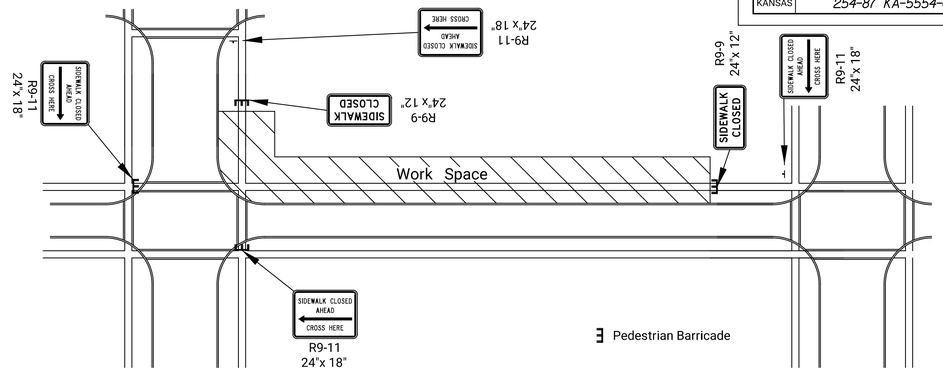


FIGURE 4: TYPICAL SIGNING FOR SIDEWALK CLOSED WITH OPPOSITE SIDEWALK AVAILABLE

Note: Sign shown for one approach to intersection (work zone).

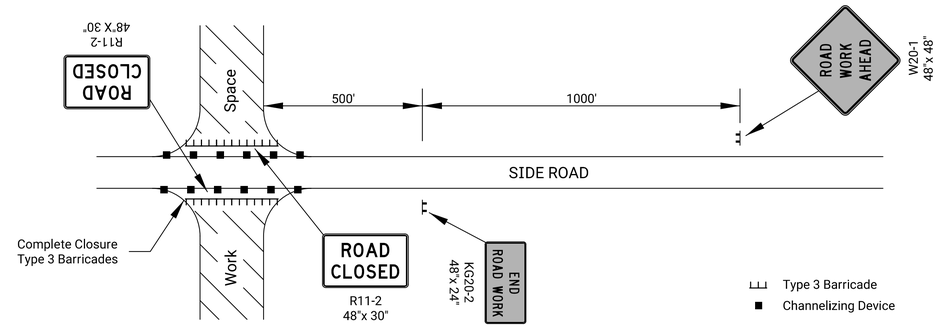


FIGURE 2: TYPICAL SIGNING FOR SIDE ROAD OPEN

Note: Signs shown for one approach to work zone.

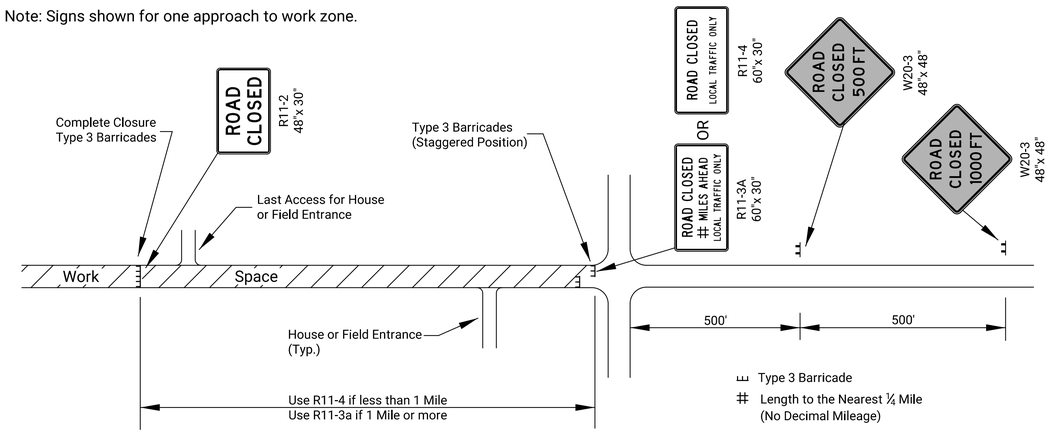
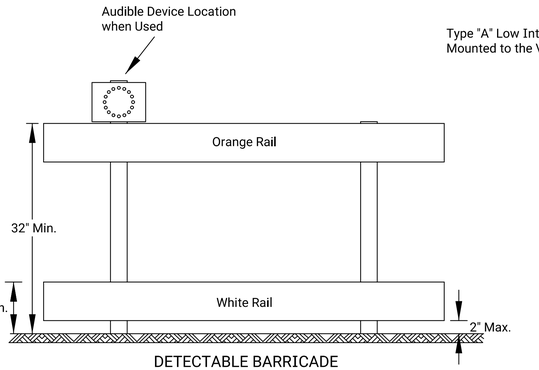
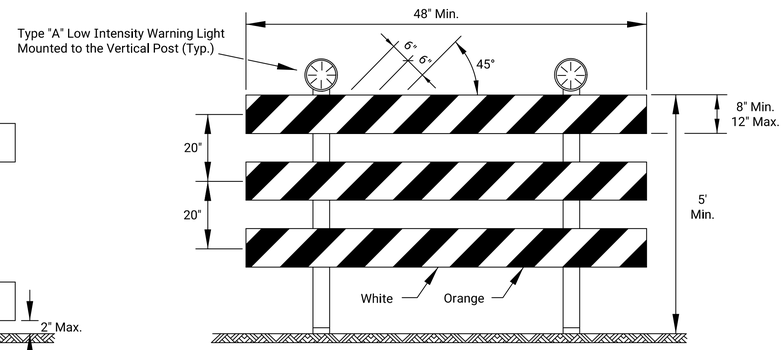


FIGURE 3: TYPICAL SIGNING FOR ROAD CLOSURE - LOCAL TRAFFIC ACCESS



DETECTABLE BARRICADE

1. Support device shall not project beyond the detection plate into the pathway.
2. Barricades shall be used to close the entire width of the pathway.
3. Do not use warning lights on pedestrian barricades.
4. Do not use warning lights on audible devices.



TYPE 3 BARRICADE WITH LIGHTS

Approved signs mounted on Type 3 barricades should not cover more than 50% of the top two rails or 33% of the total area of the three rails.

When barricades are placed end-to-end or staggered, a Type "A" low intensity warning light shall be mounted to the vertical post near each outside corner of the end barricades.

ROAD CLOSED GENERAL NOTES

As shown in Figure 1, at the point where thru traffic must detour and local traffic can proceed to the location where the roadway is completely closed, the R11-3a (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) or R11-4 (ROAD CLOSED LOCAL TRAFFIC ONLY or ROAD CLOSED TO THRU TRAFFIC) sign shall be used with Type 3 barricades (winged position), placed on the shoulders of roadway.

As shown in Figure 3, when local traffic must be allowed access into the work zone, Type 3 barricades shall be longitudinally staggered to maintain the appearance of a closed roadway. A second line of end-to-end Type 3 barricades shall be placed just beyond the last access point in the work zone, to completely close the roadway.

The R11-4 (ROAD CLOSED TO THRU TRAFFIC or ROAD CLOSED LOCAL TRAFFIC ONLY) sign shall be used when the distance to the point of complete closure of the roadway is less than 1 mile.

The R11-3a (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) sign shall be used when the distance to the point of complete closure of the roadway is 1 mile or greater.

The words "BRIDGE OUT" (or BRIDGE CLOSED) may be substituted for the words "ROAD CLOSED" on the R11-3a or R11-4 sign where applicable.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL CLOSURES

TE704

FHWA APPROVAL			06/01/15	APP'D	Kristina Ericksen		
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES		TRACED	
DESIGN CK.		DETAIL CK.		QUAN. CK.		TRACE CK.	

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401css704-01.dgn

KDOT Graphics Certified 11-02-2020

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	66	83

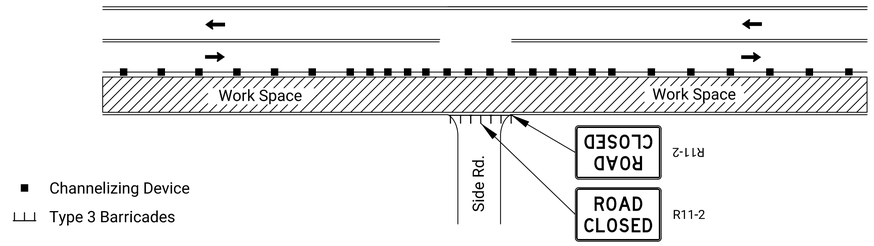


FIGURE 1: SIDE ROAD OR ENTRANCE CLOSED THROUGH WORK AREA

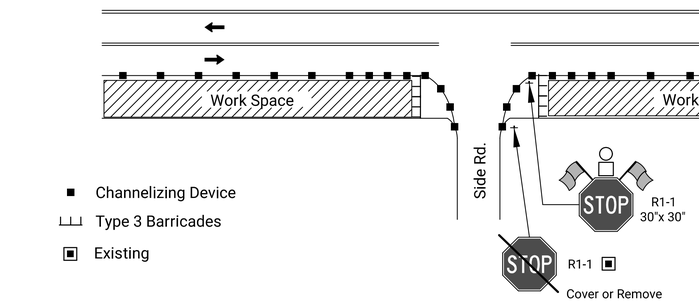


FIGURE 2: SIDE ROAD OR ENTRANCE OPEN THROUGH WORK AREA

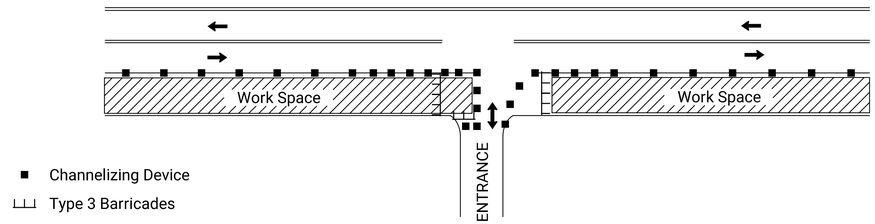


FIGURE 3: LOW VOLUME ENTRANCE CONTRUCTED HALF AT A TIME

Note: Consider large vehicles making right turns into and out of entrance and use figure 4 as needed

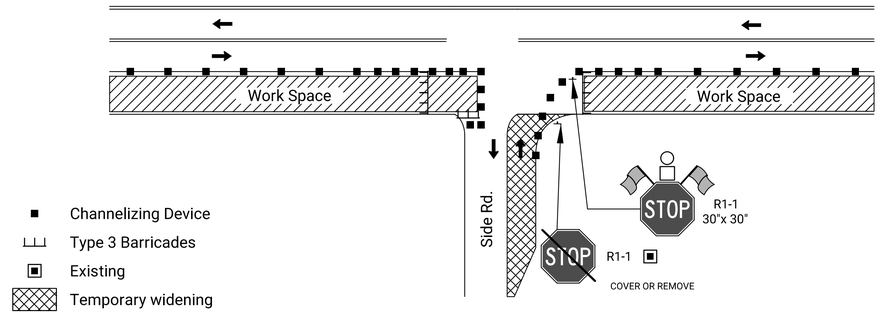


FIGURE 4: SIDE ROAD OR ENTRANCE CONSTRUCTED HALF AT A TIME: TWO WAY TRAFFIC REQUIRED

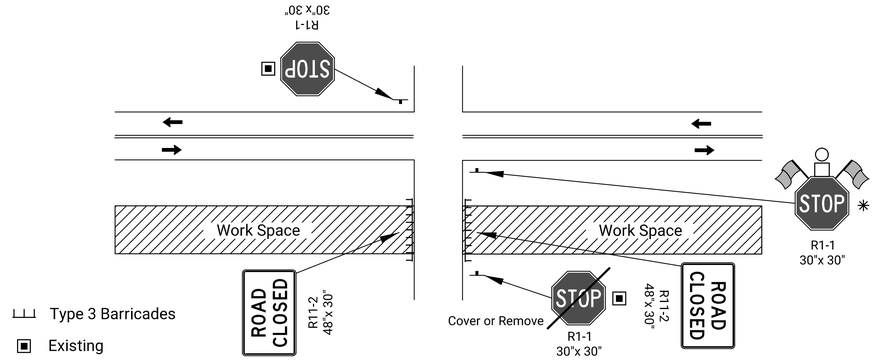


FIGURE 5: SIDE ROAD OPEN THROUGH WORK AREA ON DIVIDED ROADWAY

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
ACCESS THROUGH THE WORK AREA

TE705

FHWA APPROVAL		06/01/15	APP'D Kristina Ericksen	
DESIGNED R.W.B.	DETAILED R.W.B.		QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.		QUAN. CK.	TRACE CK.

KDOT Graphics Certified 11-02-2020

KDOT Graphics Certified

Drawn By : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA555401css705-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	67	83

SIGN LAYOUT INFORMATION

KG20-2

Std. Size Expwy/Freeway
6" C
48"x 24"

KG20-5

Std. Size Expwy/Freeway
6" C
48"x 24"

KM4-20

Std. Size: 3" C, 24"x 6"
Expwy/Freeway: 6" C, 48"x 12"

W7-3a

Mileage to be Determined by the Engineer.

W8-15

Std. Size Expwy/Freeway
8" D
48"x 48"

W8-7

Std. Size Expwy/Freeway
8" D
48"x 48"

W8-15p

Std. Size Expwy/Freeway
30"x 24"

W8-17

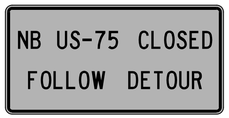
Std. Size Expwy/Freeway
48"x 48"

W8-11

Std. Size Expwy/Freeway
8" D
48"x 48"

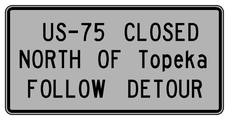
W8-17P
(Optional)

Std. Size Expwy/Freeway
30"x 24"



SP-01
(Special Sign)

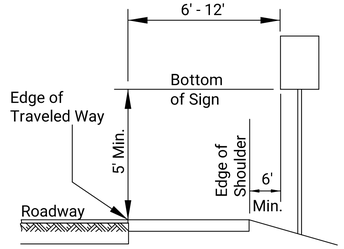
Std. Size: 6" C
Expwy/Freeway: 10" D



SP-02
(Special Sign)

Std. Size		Expwy/Freeway	
Uppercase:	6" C	Uppercase:	10" D
Lowercase:	4.5" C	Lowercase:	8" D

All city names and street names on special signs and destination signs must have upper and lower case letters.

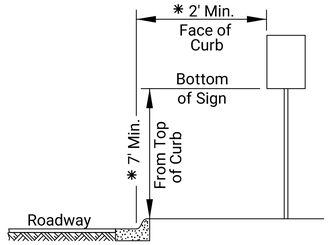


RURAL

1) Ground-mounted signs shall be mounted at a minimum height of 5' measured from the bottom of sign to the near edge of the pavement.

2) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

3) The height of the secondary sign mounted below another sign may be 4' measured from the bottom of the sign to the near edge of the pavement. Signs shall not overlap each other.



URBAN

1) Signs shall be mounted at a minimum height of 7' measured from the bottom of sign to the near edge of the pavement.

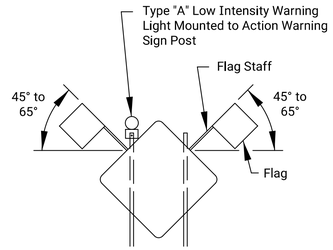
2) Neither portable nor permanent sign supports should be located on sidewalks or areas designated for pedestrian or bicycle traffic.

3) Signs mounted lower than 7' should not project more than 4" into pedestrian facilities.

4) The height from of the secondary sign mounted below another sign may be 6' measured from the bottom of sign to the near edge of the pavement. Signs shall not overlap each other.

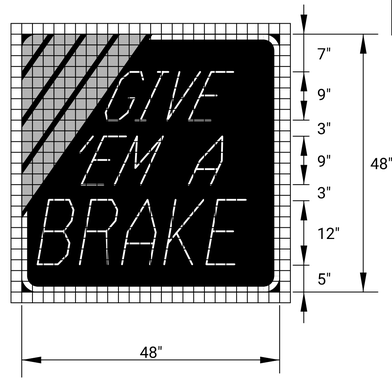
5) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

* 6) Pedestrian detour signing shall be a minimum of 2' measured from the top of the pedestrian pathway to the bottom of the sign and shall not protrude into the walkway nor shall it project beyond the back of curb.



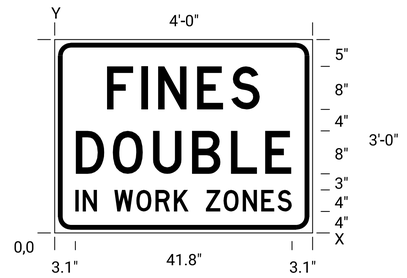
When the sign width is equal to or greater than 9', three or more wood posts may be used with a minimum of 4' between the centerline of each post. All signs less than 9' in width shall use a maximum of two wood posts.

In the case of hitting rock when driving posts
1. Shift the sign location. Do not violate minimum sign spacing.
2. With the engineer's approval, use acceptable alternative sign stands.



KI-104a

Sign Number	GIVE EM A BRAKE
Width x Height	4'-0" x 4'-0"
Border Width	1.0"
Corner Radius	4.0"
Stripe Width	3.0"
Mounting	Ground
Background	Type: Non-Reflective
	Color: Black
Legend/Border	Type: Reflective
	Color: White
Legend Font	Dutch 801 Roman SWC 25 Degree Slant
Stripes	Type: Reflective
	Color: Orange



KI-105a

Sign Number	FINES DOUBLE
Width x Height	4'-0" x 3'-0"
Border Width	0.9"
Corner Radius	3.0"
Mounting	Ground
Background	Type: Reflective
	Color: White
Legend/Border	Type: Non-Reflective
	Color: Black

Dimensions in inches — Spacings are to start of next letter

Y FONT	LETTER SPACINGS															HT LEN
23.0 D	X	F	I	N	E	S	X									8.0
	9.7	6.4	3.2	7.3	6.4	5.4	9.7									28.6
11.0 D	X	D	O	U	B	L	E	X								8.0
	3.9	6.9	7.5	7.3	7.3	6.4	4.9	3.9								40.3
4.0 D	X	I	N	X	W	O	R	K	X	Z	O	N	E	S	X	4.0
	3.1	1.6	2.7	3.2	4.3	3.8	3.6	2.8	3.2	3.4	3.8	3.6	3.2	2.7	3.1	41.8

Notes:

Typically, there are two sets of informational signs installed per project: one for each direction of traffic.

Install signs a minimum of 500' in advance of the road work ahead sign. The engineer may designate a more appropriate location if conditions dictate.

The informational signs are not to interfere with the traffic control signs for the project.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
SIGN INFORMATION

TE710

FHWA APPROVAL		06/01/15	APP'D	Kristina Pyle	
DESIGNED	R.W.B.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

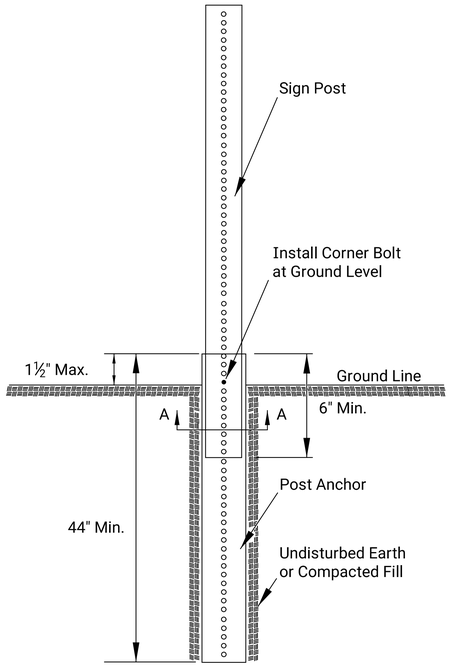
KDOT Graphics Certified 11-02-2020

KDOT Graphics Certified

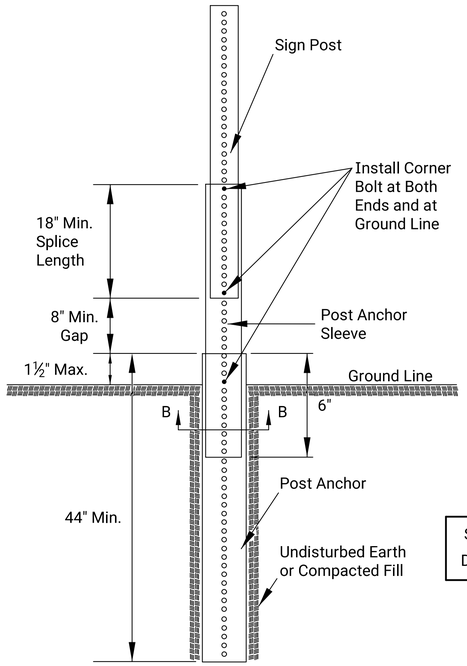
Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA5554401css710-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	68	83

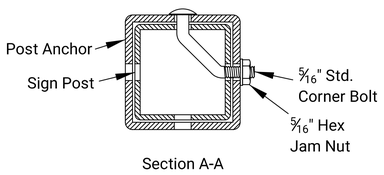
PERFORATED SQUARE STEEL TUBE (P.S.S.T.) POST SETUP



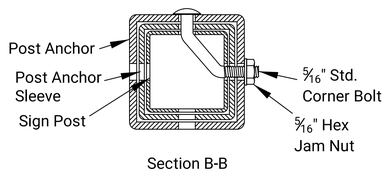
P.S.S.T. Detail



Telescoping P.S.S.T. Detail



Section A-A

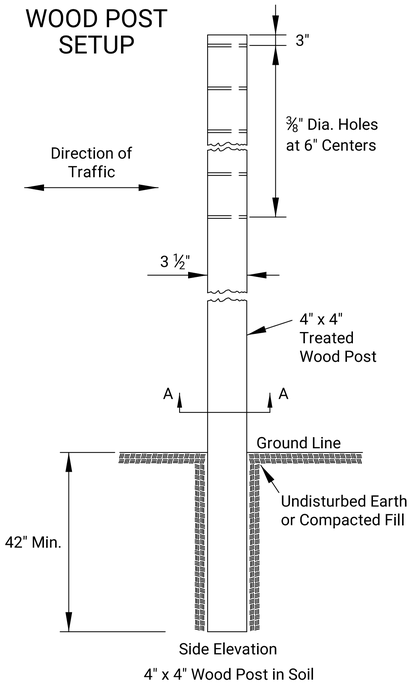


Section B-B

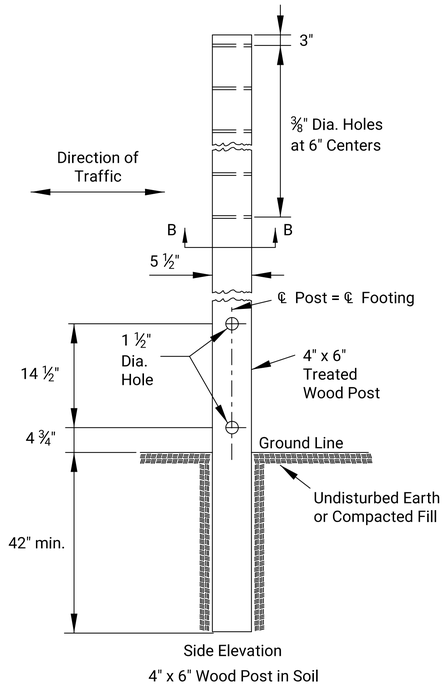
Details for 2", 2 ¼", or 2 ½" sign posts

Place bolts in the same corner along each sign post.

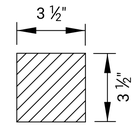
WOOD POST SETUP



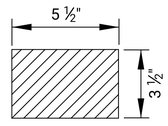
Side Elevation
4" x 4" Wood Post in Soil



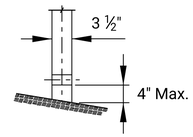
Side Elevation
4" x 6" Wood Post in Soil



Section A-A



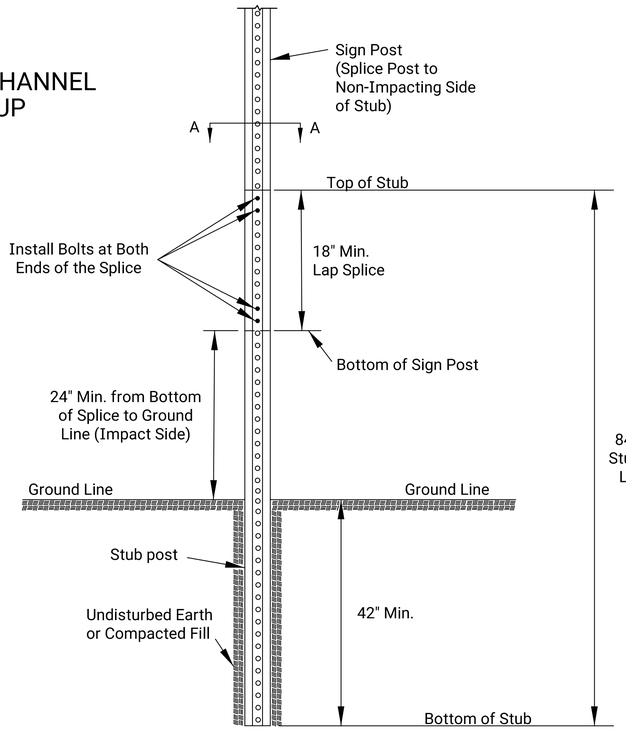
Section B-B



Front Elevation

See TE710 for Additional Details and Requirements

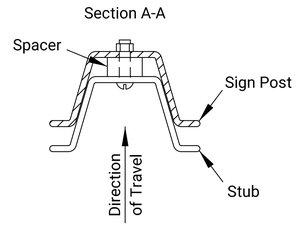
3 LB/F U-CHANNEL SETUP



Notes:

Place two bolts at both ends of the splice through the holes nearest the ends of the splice.

Use manufacturer recommended spacers over the bolts between the spliced pieces of U-Channel.



NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SIGN POSTS

TE712

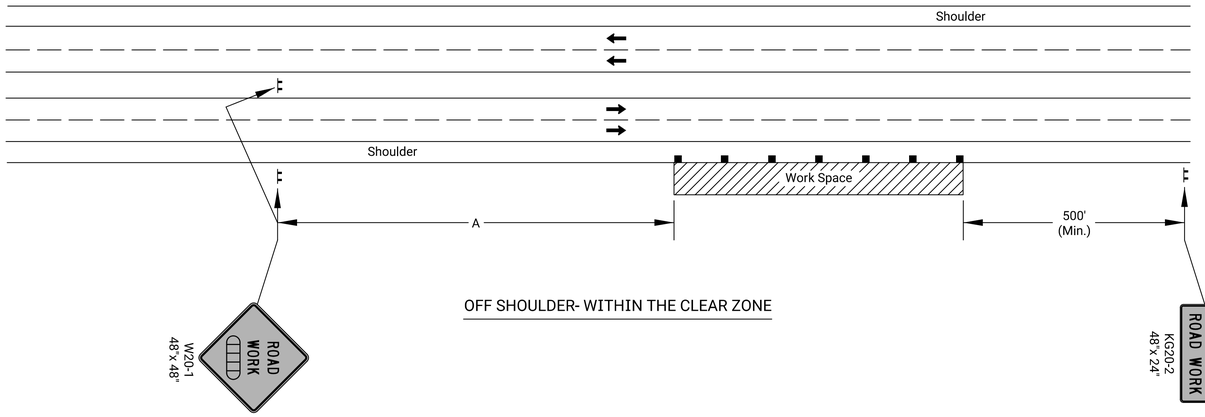
FHWA APPROVAL			06/01/15	APP'D	Kristina Pyle		
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES		TRACED	
DESIGN CK.		DETAIL CK.		QUAN. CK.		TRACE CK.	

KDOT Graphics Certified 11-02-2020

KDOT Graphics Certified

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA5554O1css712-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	69	83



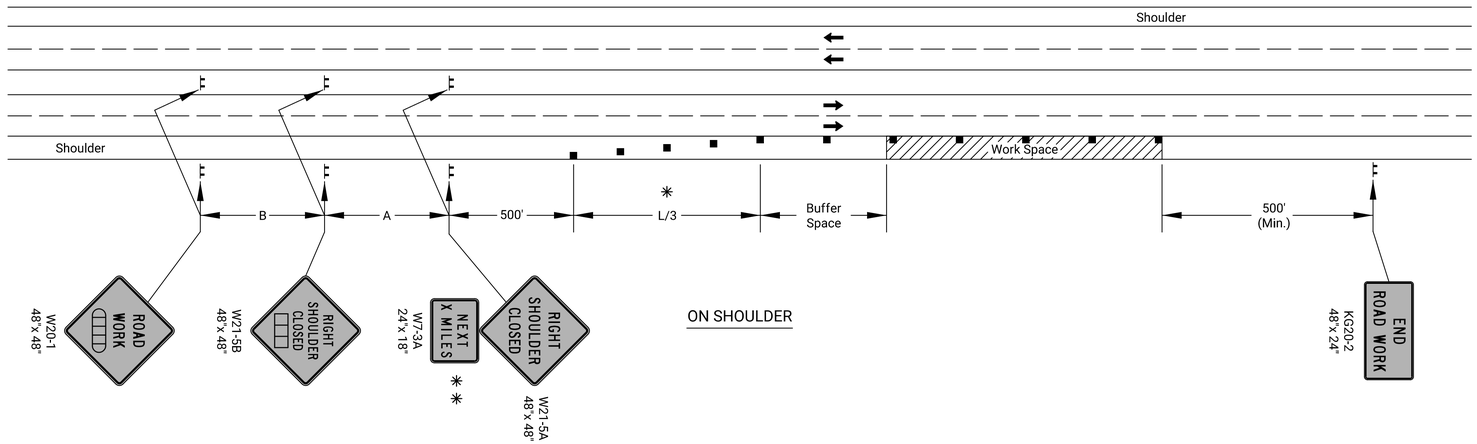
OFF SHOULDER- WITHIN THE CLEAR ZONE

Notes:

For work in the median, install signs and channelizing devices for each direction of traffic according to the applicable typical drawing.

No traffic control is required if the Work Space is located outside of the clear zone.

For operations of 60 minutes or less, all signs and channelizing devices may be eliminated if a vehicle with a high-intensity rotating, flashing, oscillating, or strobe light is used.



ON SHOULDER

✳ Omit taper if paved shoulder is less than 8' wide.

✳✳ Eliminate W7-3a if shoulder is closed for less than 2 miles.

X Length to the Nearest Whole Mile
■ Channelizing Device
Ahead, 1500 ft, or 1 Mile
Ahead, 1000 ft, 1500 ft or ½ Mile

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
SHOULDER WORK
DIVIDED ROADWAY

TE722

FHWA APPROVAL		06/01/15	APP'D	Kristina Ericksen	
DESIGNED	L.E.R.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

KDOT Graphics Certified 11-02-2020

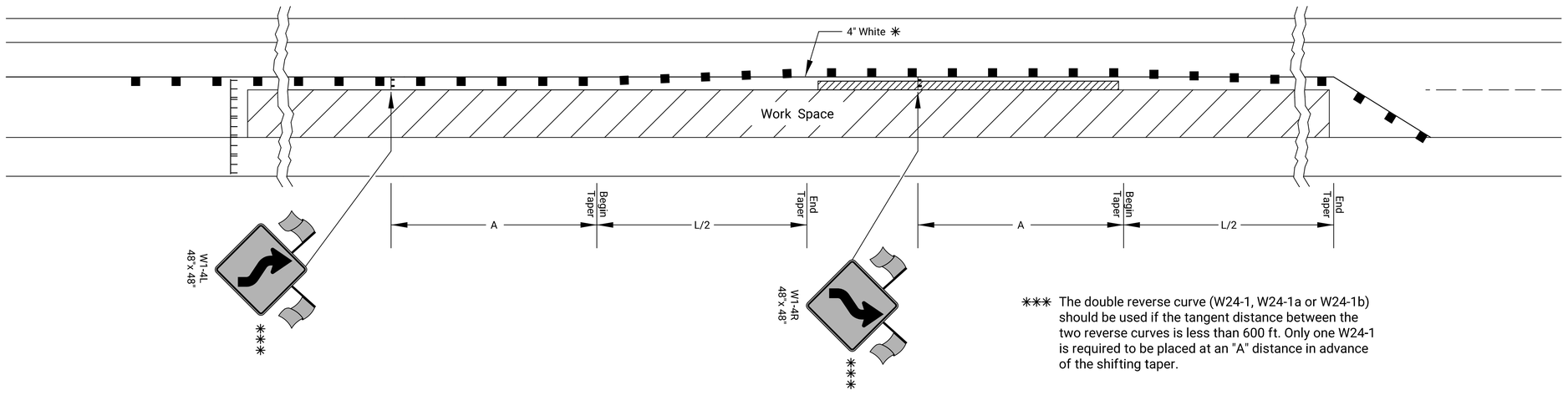
KDOT Graphics Certified

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA5554401css722-01.dgn

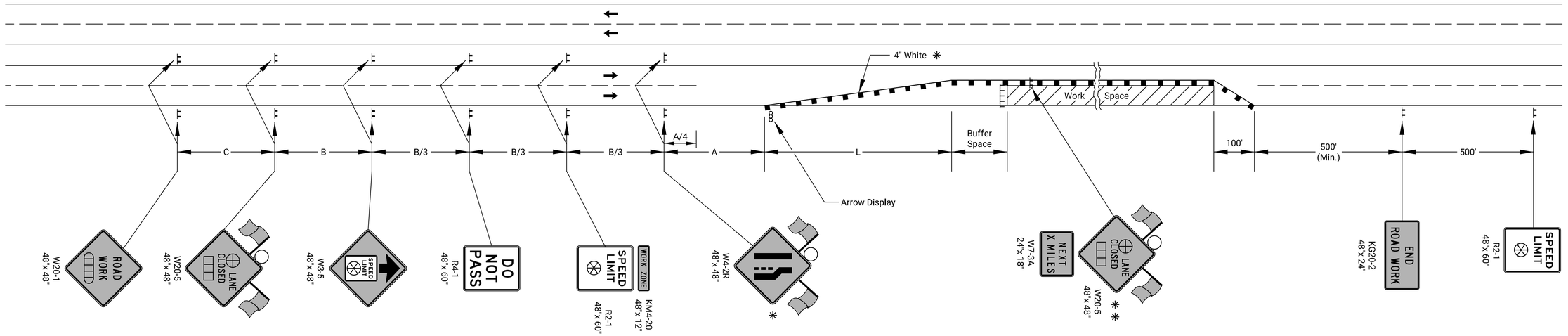
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	70	83

SHIFTING TAPER DETAIL

Add signs and devices as shown for work inside a closed lane that extends near to (or into) the open traffic lane.



✳✳✳ The double reverse curve (W24-1, W24-1a or W24-1b) should be used if the tangent distance between the two reverse curves is less than 600 ft. Only one W24-1 is required to be placed at an "A" distance in advance of the shifting taper.



- Type 3 Barricades
- X Length to the Nearest Whole Mile
- ■ Channelizing Device
- Ahead, 1500 ft, or 1 mile
- Ahead, 1000 ft, 1500 ft, or ½ mile
- ⊕ Right or Left
- ⊗ Speed to be determined by the Engineer
- ○ Type "A" Low Intensity Warning Light

✳ For left lane closures use W4-2L and yellow edge line along channelizing devices.

✳✳ The W20-5 (⊕Lane Closed) and W7-3A (Next X Miles) signs should be placed at 2 mile increments on a project of 4 miles or longer.

Left-side signs shall be omitted for a four-lane undivided highway.

One flagger should be stationed within each multi-lane roadway activity area where work is in a closed lane adjacent to traffic and not separated by a concrete safety barrier system.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1	03/13/18	W24-1 usage changed to Should	R.W.B.	E.G.K.

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
LANE CLOSURE ON MULTI LANE HWY

TE744

FHWA APPROVAL		03/13/18	APP'D	Eric Kocher	
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN. CK.	TRACE CK.

KDOT Graphics Certified 11-02-2020

KDOT Graphics Certified

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401css744-01.dgn

SUMMARY OF TRAFFIC CONTROL DEVICES (EACH)

Work Zone Sign (Special)		
Sign No.	16.25 Sq.Ft. & Less	16.26 Sq.Ft. & Over

SUMMARY OF TRAFFIC CONTROL DEVICES (EACH PER DAY)

✳ Quantity most used on the project at any one time

Work Zone Signs ✳			
Sign No.	Size - Sq.Ft.		
	0-9.25	9.26-16.25	16.26 & Over
W20-7		2	
KG20-2	2		
KM4-20	4		
R11-2		4	
R11-4		2	
R2-1	6		
R4-1	4		
W20-1		4	
W20-3		4	
W20-5		4	
W3-5		4	
W4-2R		4	
R3-2	4		

Barricades ✳	
Type 3 (4' to 12')	Pedestrian
26	

Channelizing Devices ✳		
Fixed	Portable	Pedestrian
	167	

Lighted Devices ✳	
Work Zone Warning Light (Type "A" Low Intensity)	60
Work Zone Warning Light (Red Type "B" High Intensity)	
Arrow Display	2
Portable Changeable Message Sign	2

Recapitulation of Quantities		
Item	Quantity	Unit
Work Zone Signs (0 to 9.25 Sq.Ft.)	2,600	Each Per Day
Work Zone Signs (9.26 to 16.25 Sq.Ft.)	3,640	Each Per Day
Work Zone Signs (16.26 Sq.Ft. & Over)		Each Per Day
Work Zone Barricades (Type 3 - 4' to 12')	3,380	Each Per Day
Work Zone Barricades (Pedestrian)		Each Per Day
Channelizer (Fixed)		Each Per Day
Channelizer (Portable)	21,170	Each Per Day
Channelizer (Pedestrian)		Each Per Day
Work Zone Warning Light (Type "A" Low Intensity)	7,800	Each Per Day
Work Zone Warning Light (Red Type "B" High Intensity)		Each Per Day
Arrow Display	260	Each Per Day
Portable Changeable Message Sign	260	Each Per Day
Pavement Marking (Temporary)		
4" Solid (Type I)	71	Sta./Line
4" Solid (Type II)		Sta./Line
4" Broken (8.0') (Type I)		Sta./Line
4" Broken (8.0') (Type II)		Sta./Line
4" Broken (3.0') (Type I)		Sta./Line
4" Broken (3.0') (Type II)		Sta./Line
4" Dotted Extension (Type I)		Sta./Line
4" Dotted Extension (Type II)		Sta./Line
Solid (Line Masking Tape)		Sta./Line
Broken (Line Masking Tape)		Sta./Line
Symbol (Type I)		Each
Symbol (Type II)		Each
Flexible Raised Pavement Marker (4" Broken (8.0'))		Sta./Line
Flexible Raised Pavement Marker (4" Broken (3.0'))		Sta./Line
Pavement Marking Removal	7,045	Lin. Ft.
Work Zone Sign (Special) (16.25 Sq. Ft. & Less)		Each
Work Zone Sign (Special) (16.26 Sq. Ft. & More)		Each
Rigid Raised Pavement Marker (Type I)		Each
Rigid Raised Pavement Marker (Type II)		Each
Traffic Signal Installation (Temporary)		Lump Sum
Traffic Control (Initial Set Up)	Lump Sum	Lump Sum
Traffic Control		Lump Sum
Flagger (Set Price)	1	Hour

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
SUMMARY OF DEVICES
RECAPITULATION OF QUANTITIES

TE795

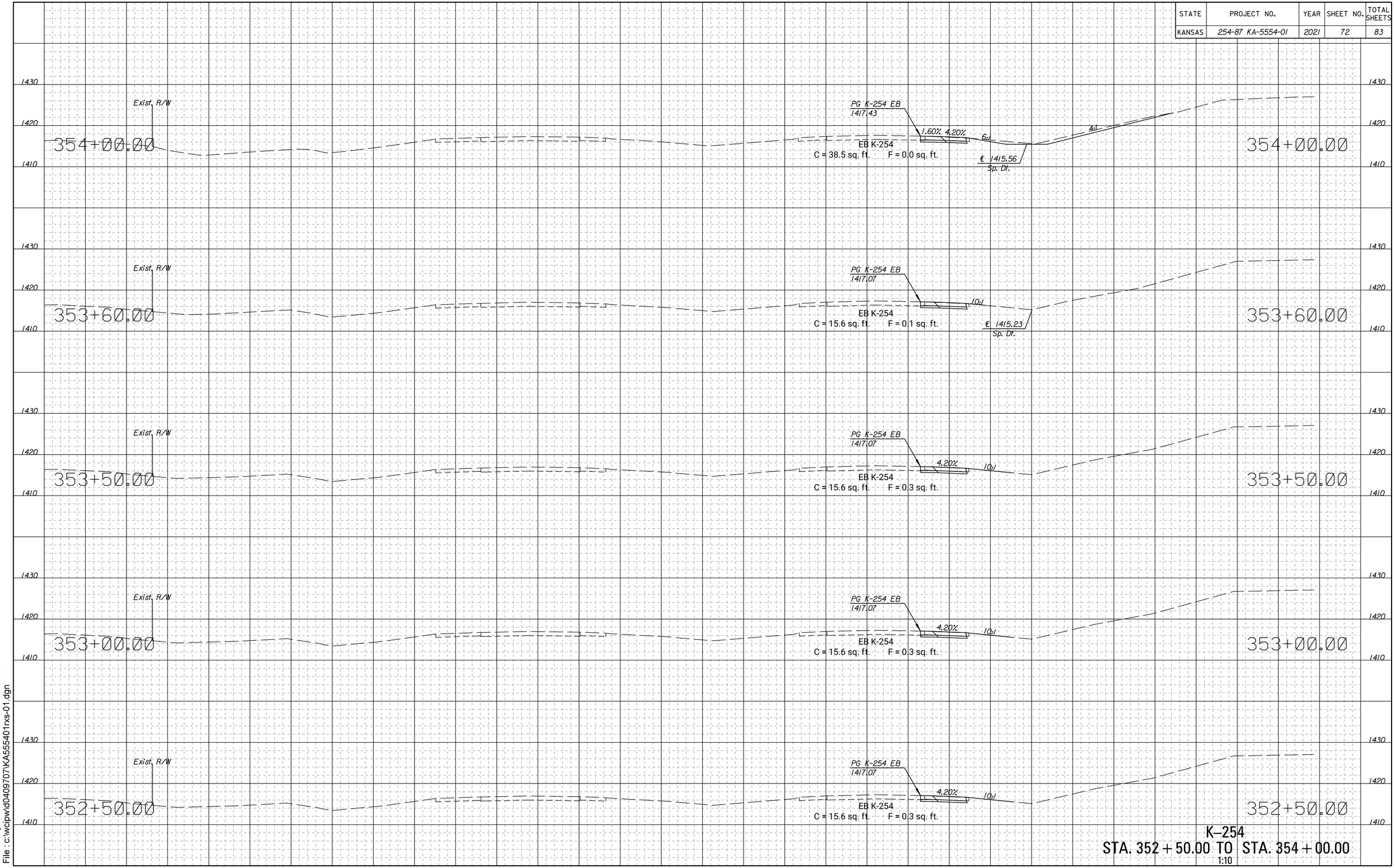
FHWA APPROVAL 06/01/15 APP'D Kristina Ericksen
DESIGNED B.A.H. DETAILED R.W.B. QUANTITIES TRACED
DESIGN CK. DETAIL CK. QUAN. CK. TRACE CK.

Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA555401css795-01.dgn

KDOT Graphics Certified

KDOT Graphics Certified 12-10-2021

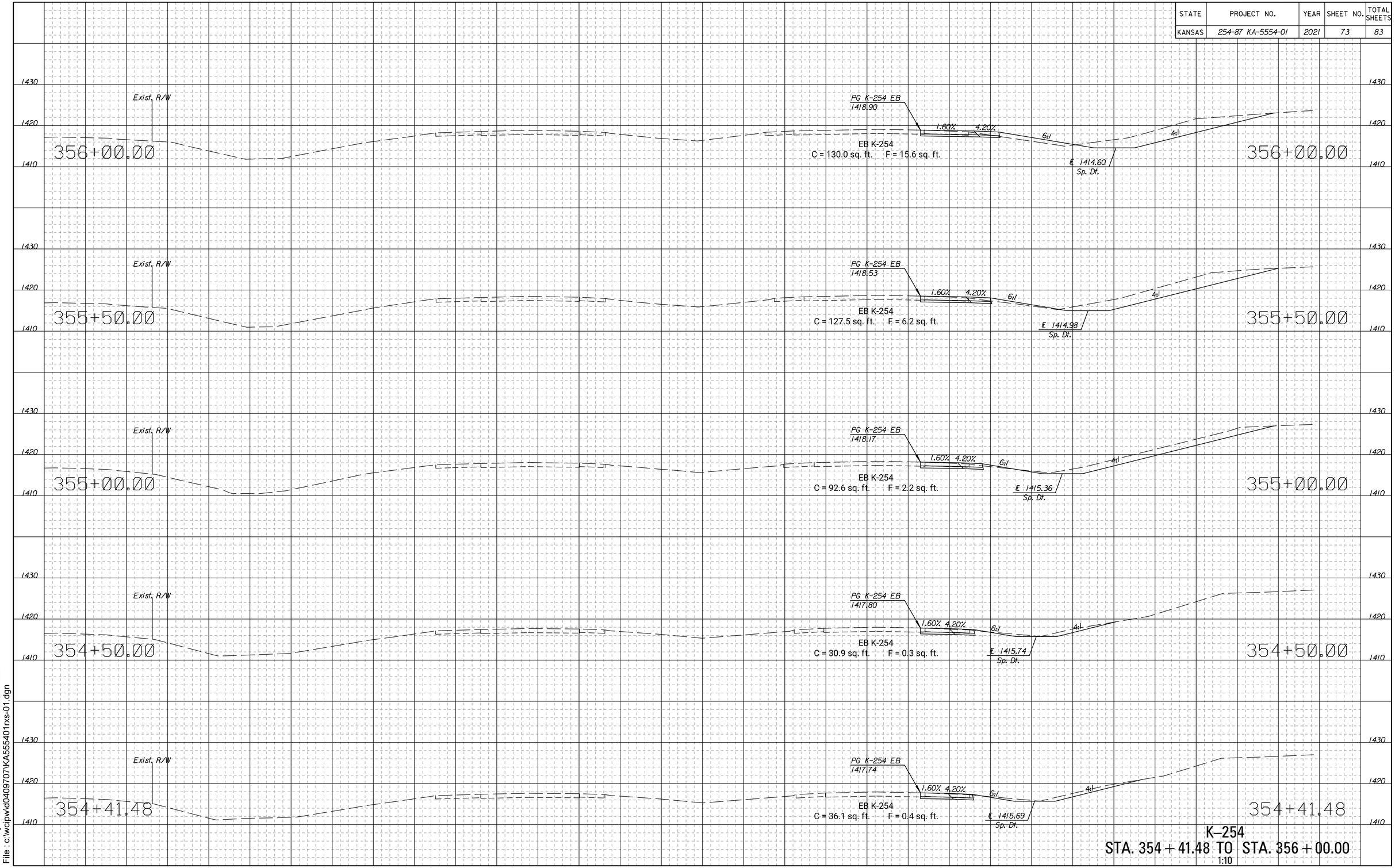
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	72	83



Drawn By: SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA5554401rxs-01.dgn

K–254
STA. 352 + 50.00 TO STA. 354 + 00.00
1:10

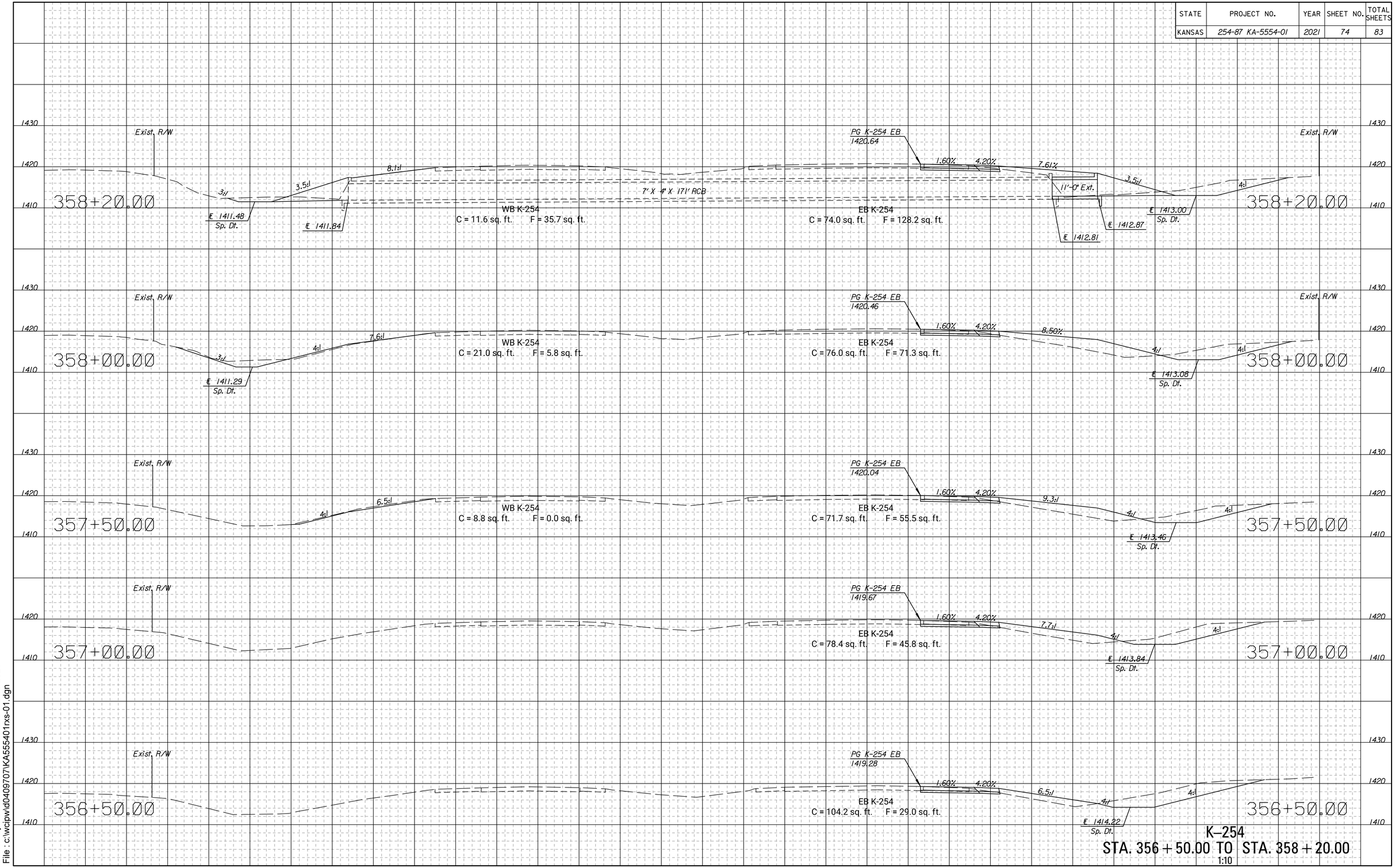
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	73	83



Drawn By: SJHorvatic Plotted: 12/10/2021
File: c:\wcipw\d0409707\KA5554401rxs-01.dgn

K–254
STA. 354 + 41.48 TO STA. 356 + 00.00
1:10

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	74	83

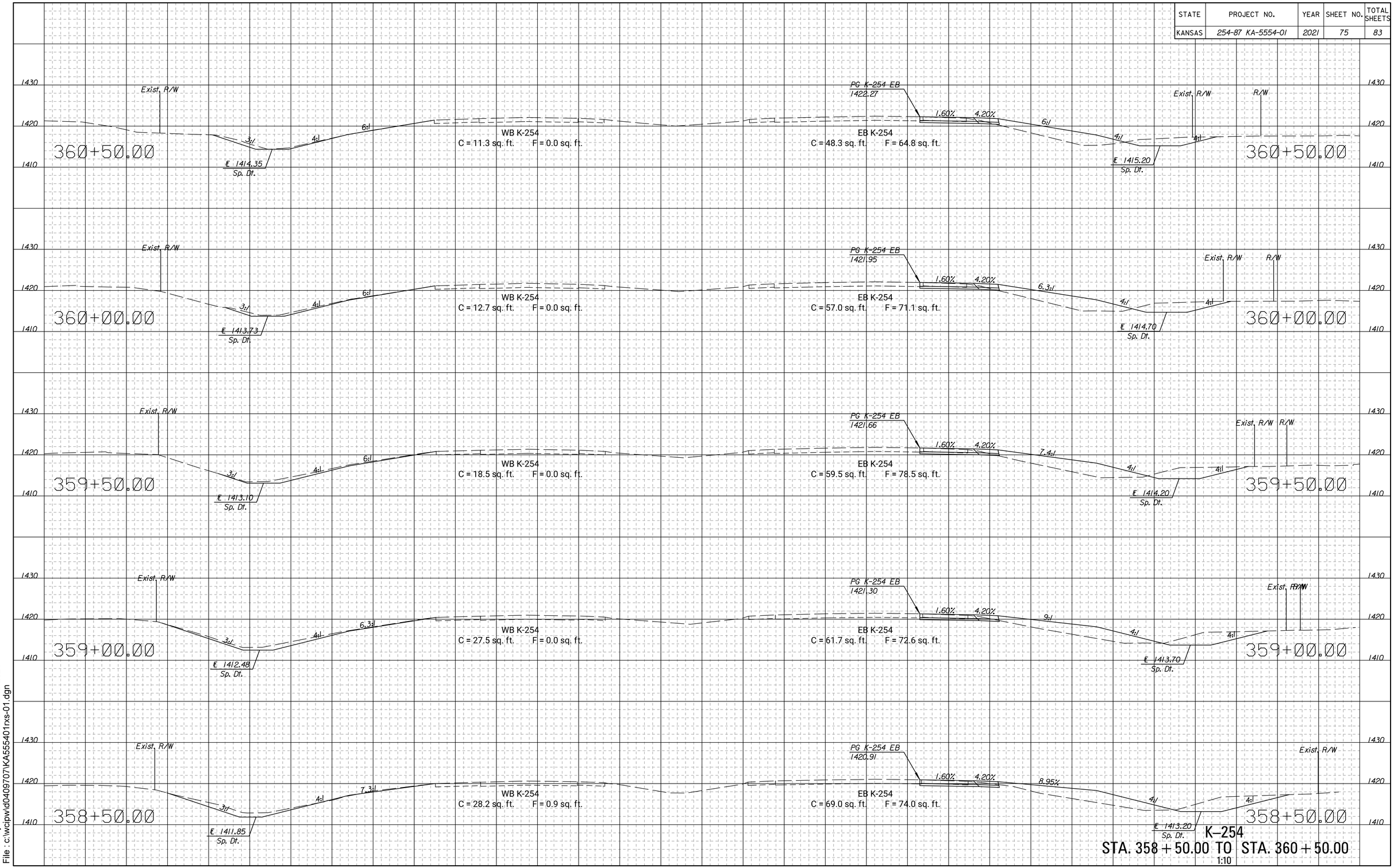


K–254
STA. 356 + 50.00 TO STA. 358 + 20.00

1:10

Drawn By : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA5554401rxs-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	75	83

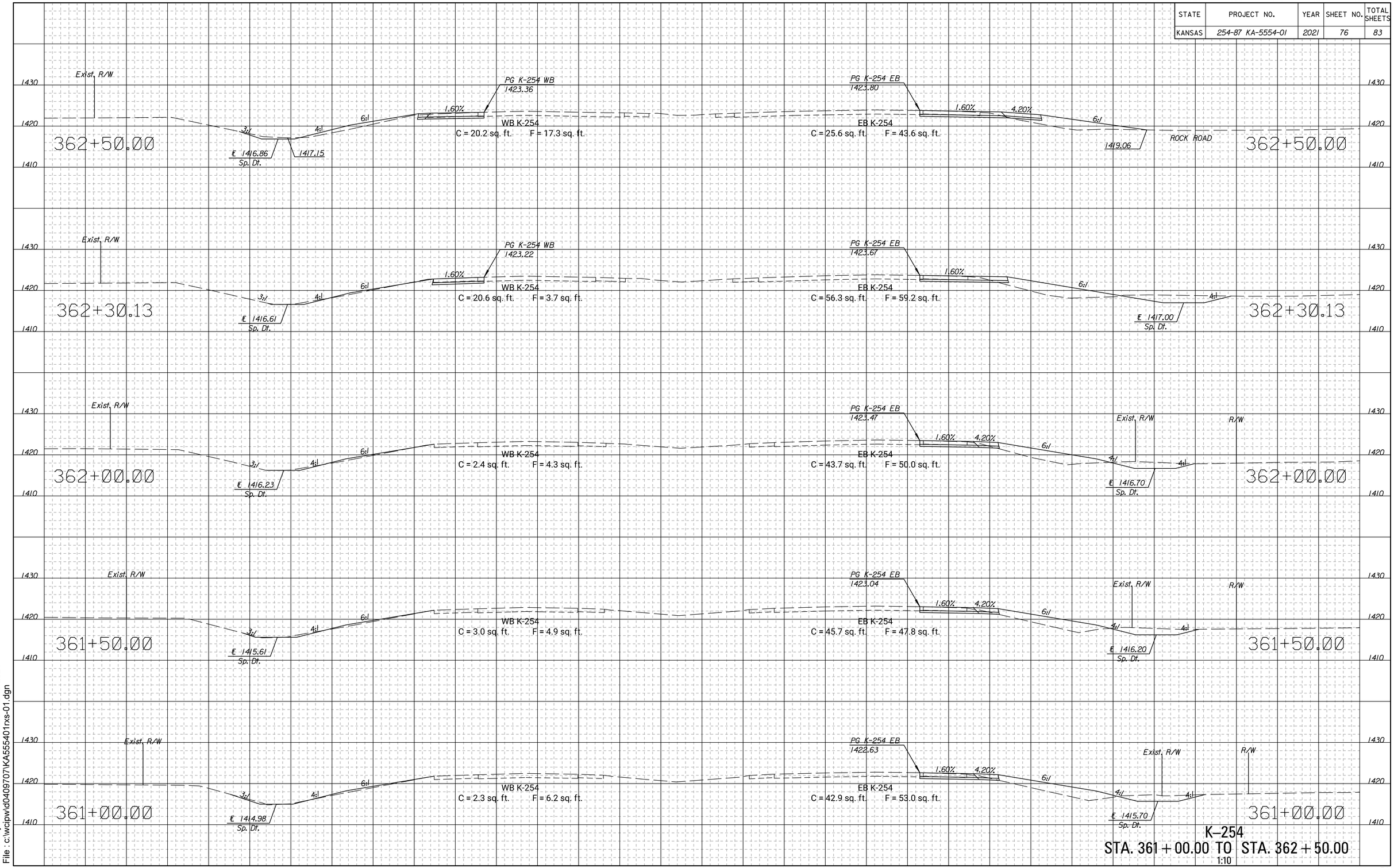


Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA5554401rxs-01.dgn

K–254
STA. 358 + 50.00 TO STA. 360 + 50.00

1:10

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	76	83

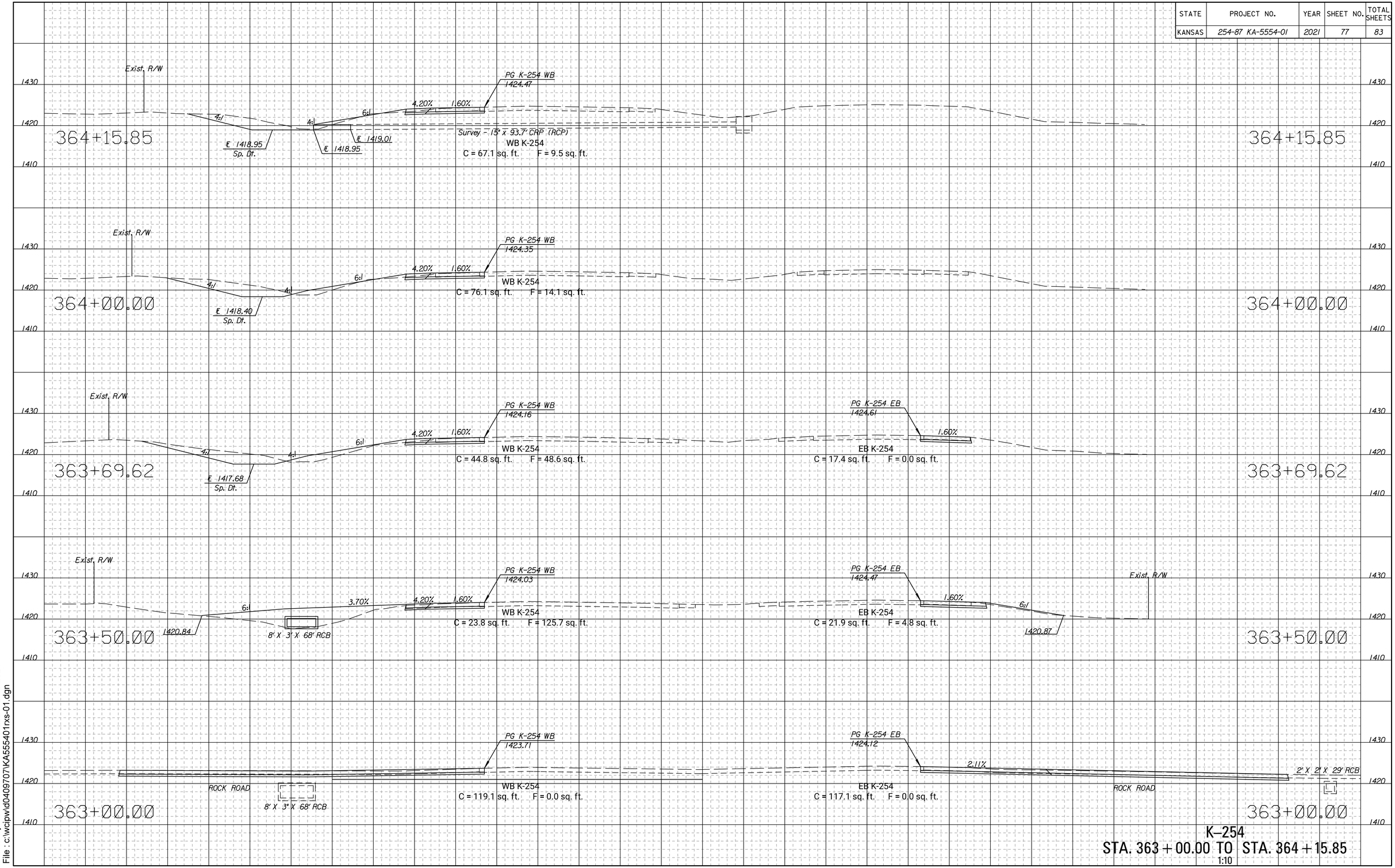


Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipwd0409707\KA555401rxs-01.dgn

K–254
STA. 361 + 00.00 TO STA. 362 + 50.00

1:10

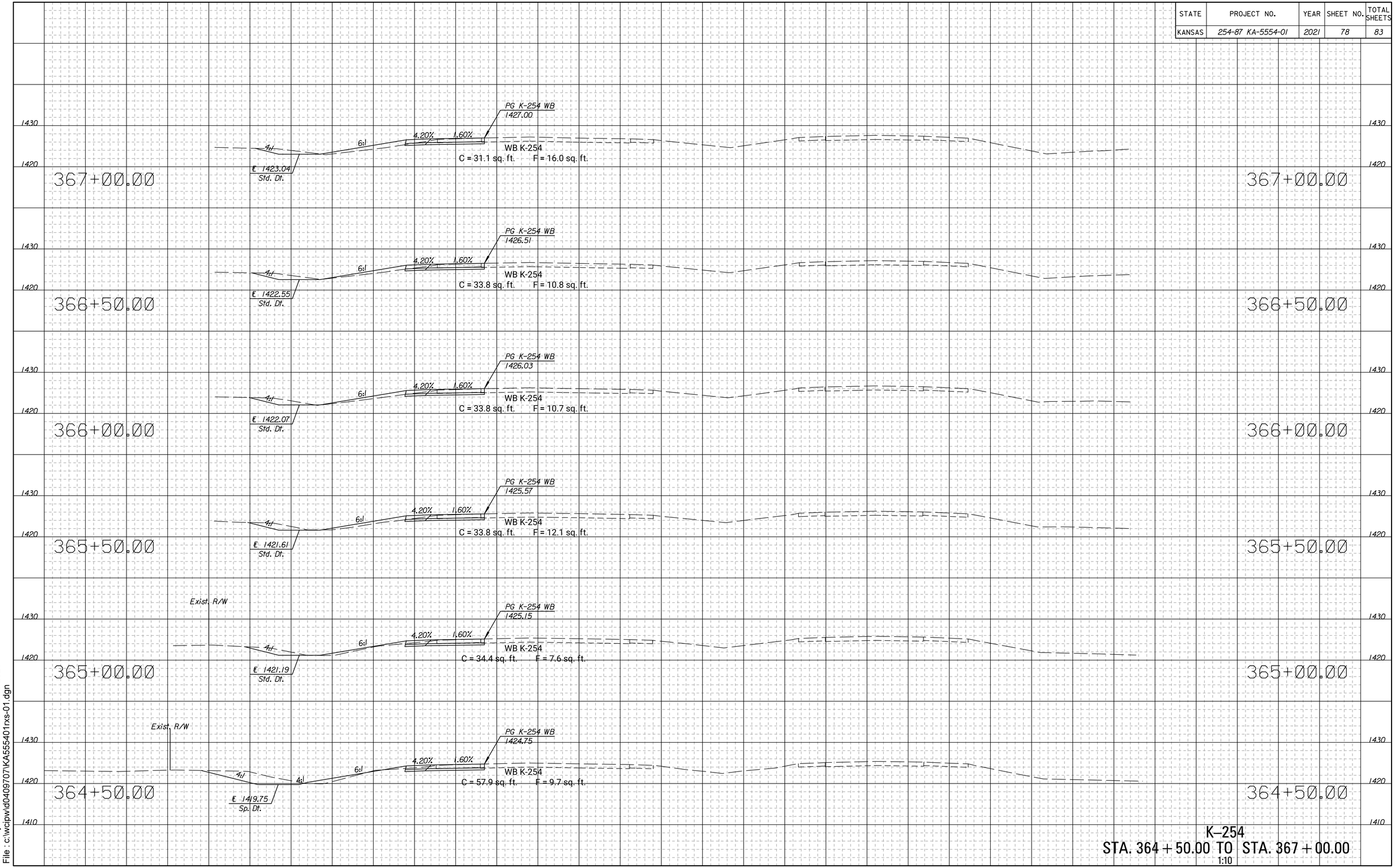
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	77	83



Drawn By : SJHorvatic Plotted : 12/10/2021
File : c:\wcipw\d0409707\KA5554401rxs-01.dgn

K–254
STA. 363 + 00.00 TO STA. 364 + 15.85
1:10

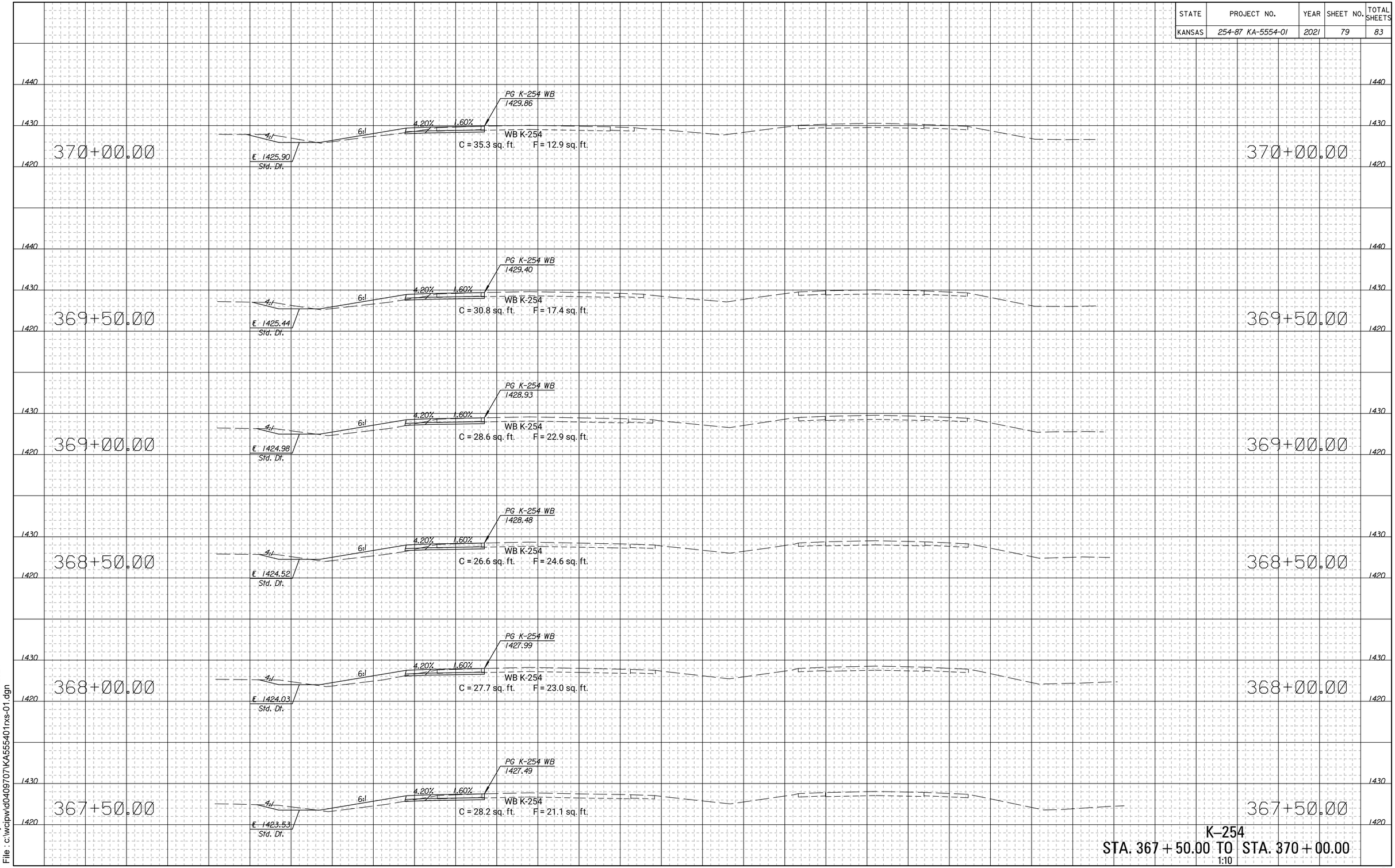
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	78	83



Drawn By : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA555401rxs-01.dgn

K–254
STA. 364 + 50.00 TO STA. 367 + 00.00
1:10

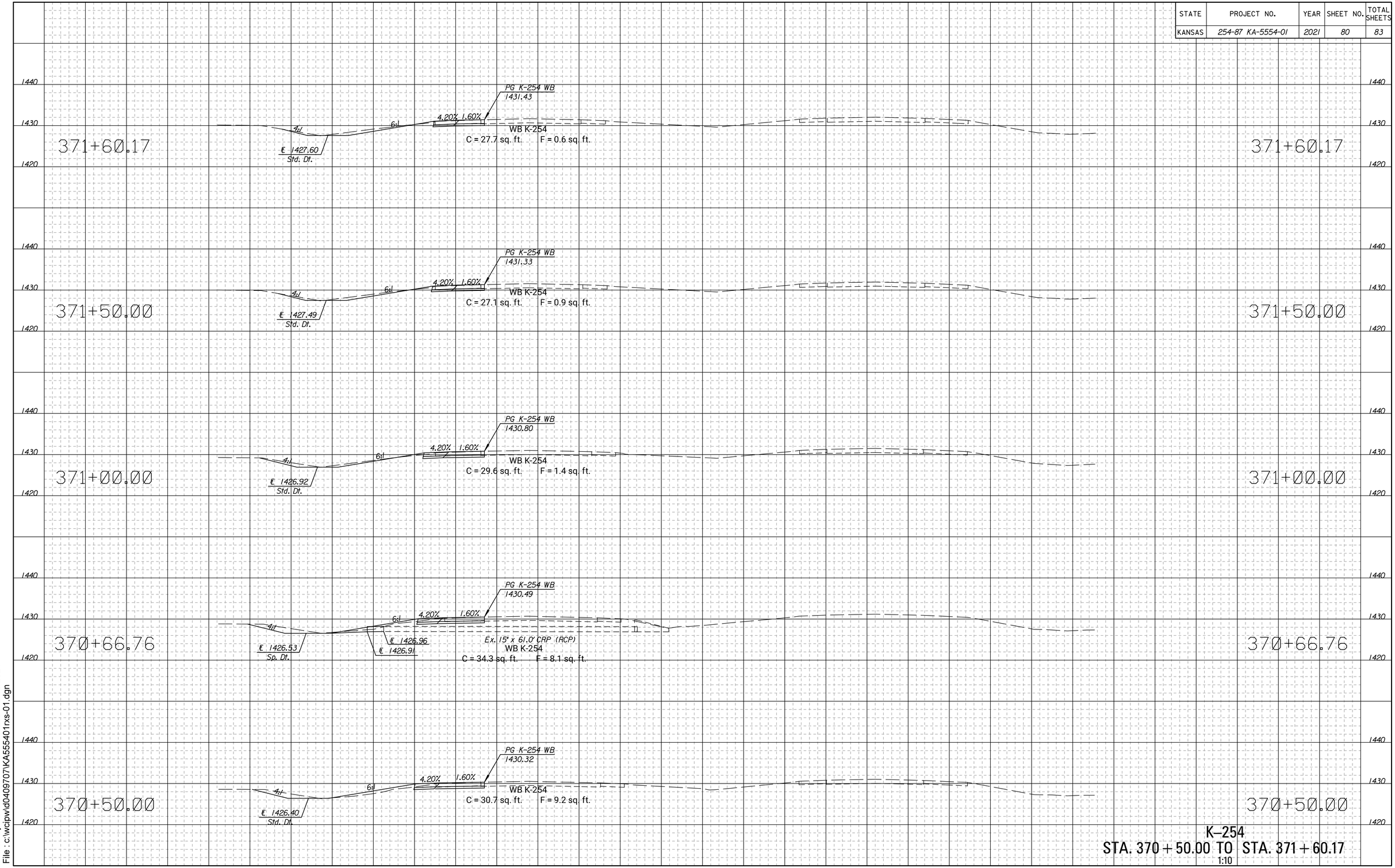
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	79	83



K–254
STA. 367 + 50.00 TO STA. 370 + 00.00
1:10

Drawn By : SJHorvatic
File : c:\wolpwd0409707\KA555401rxs-01.dgn
Plotted : 12/10/2021

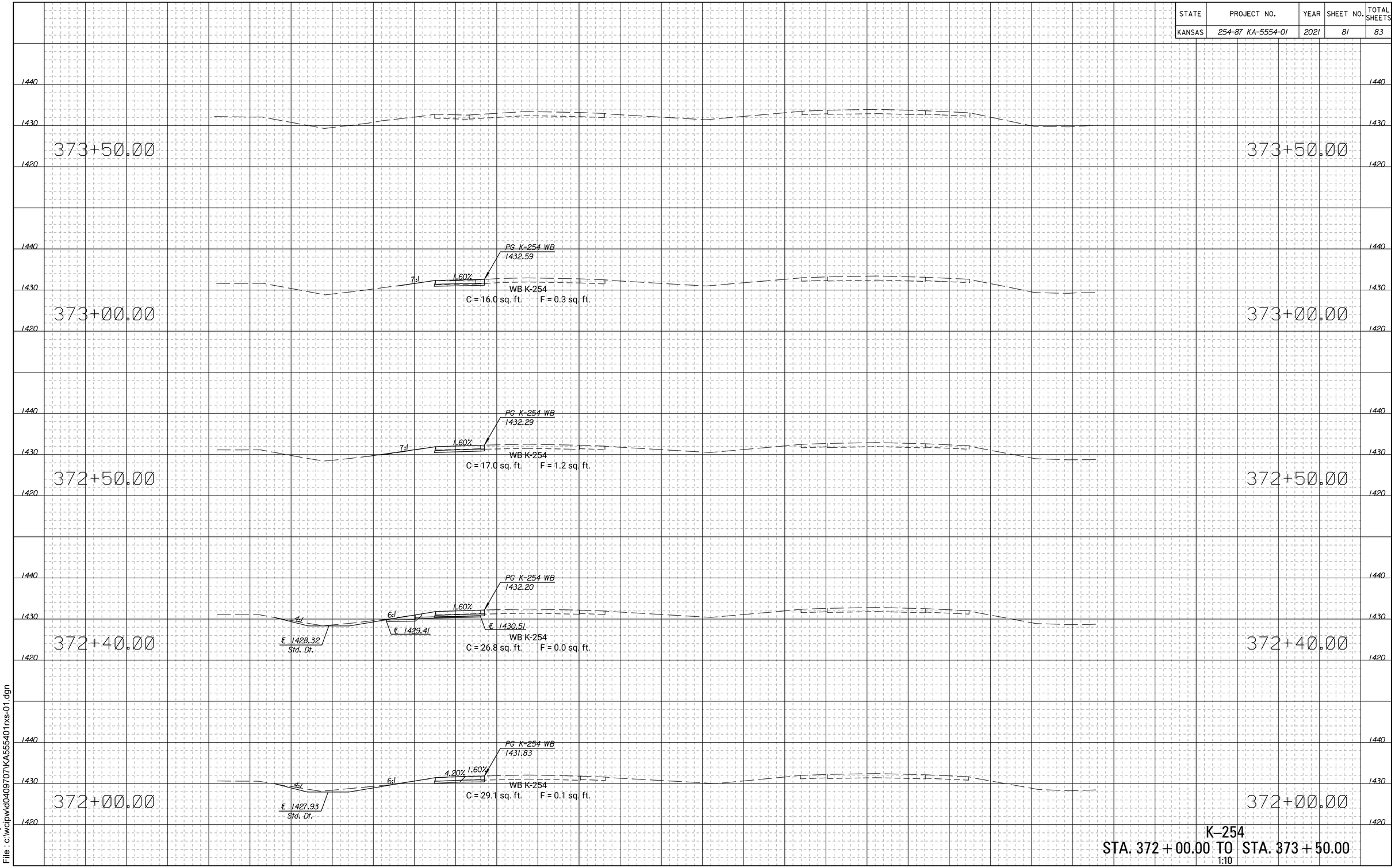
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	80	83



Drawn By: : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA5554401rxs-01.dgn

K–254
STA. 370 + 50.00 TO STA. 371 + 60.17
1:10

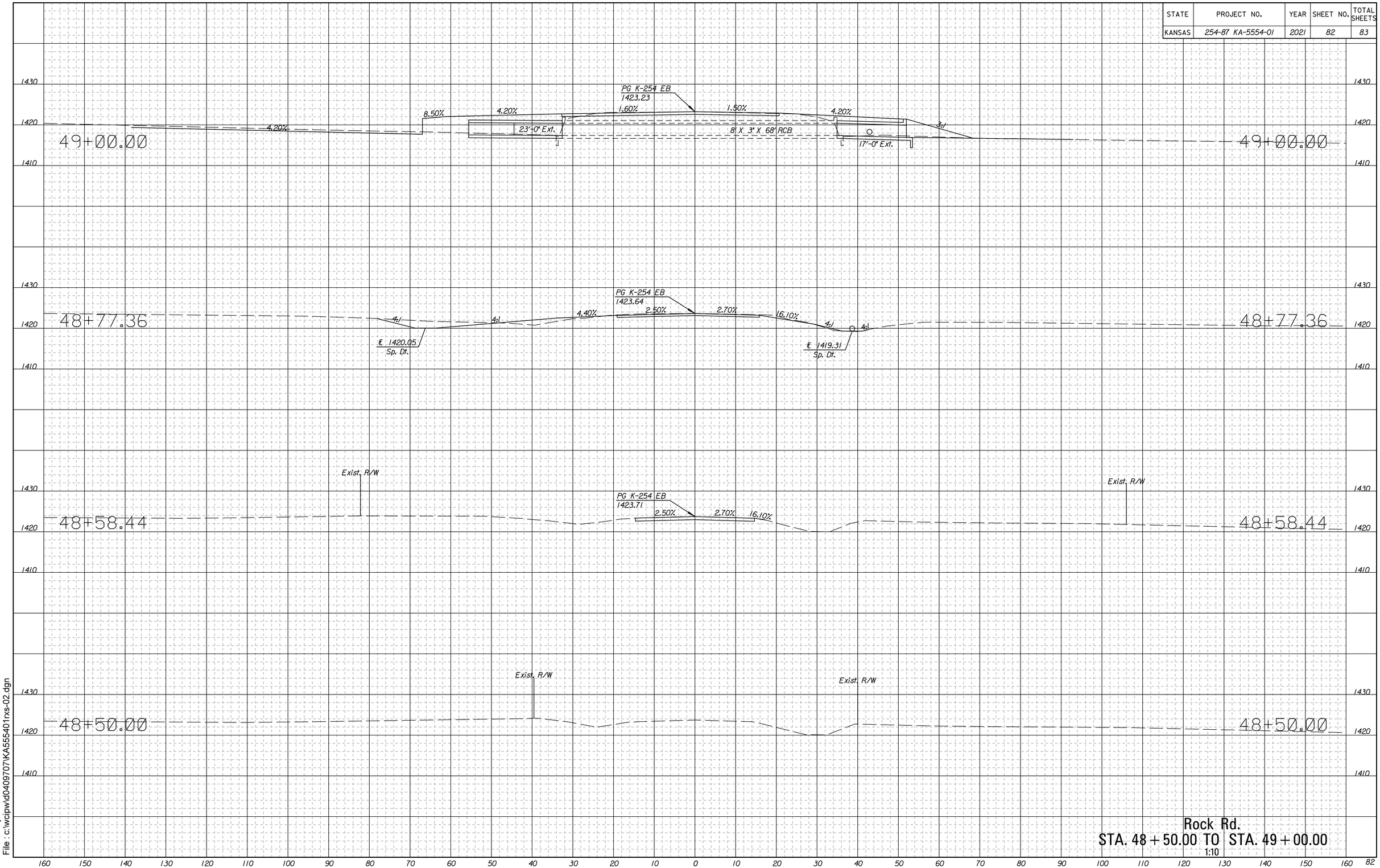
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	81	83



Drawn By: : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA5554401rxs-01.dgn

K–254
STA. 372 + 00.00 TO STA. 373 + 50.00
1:10

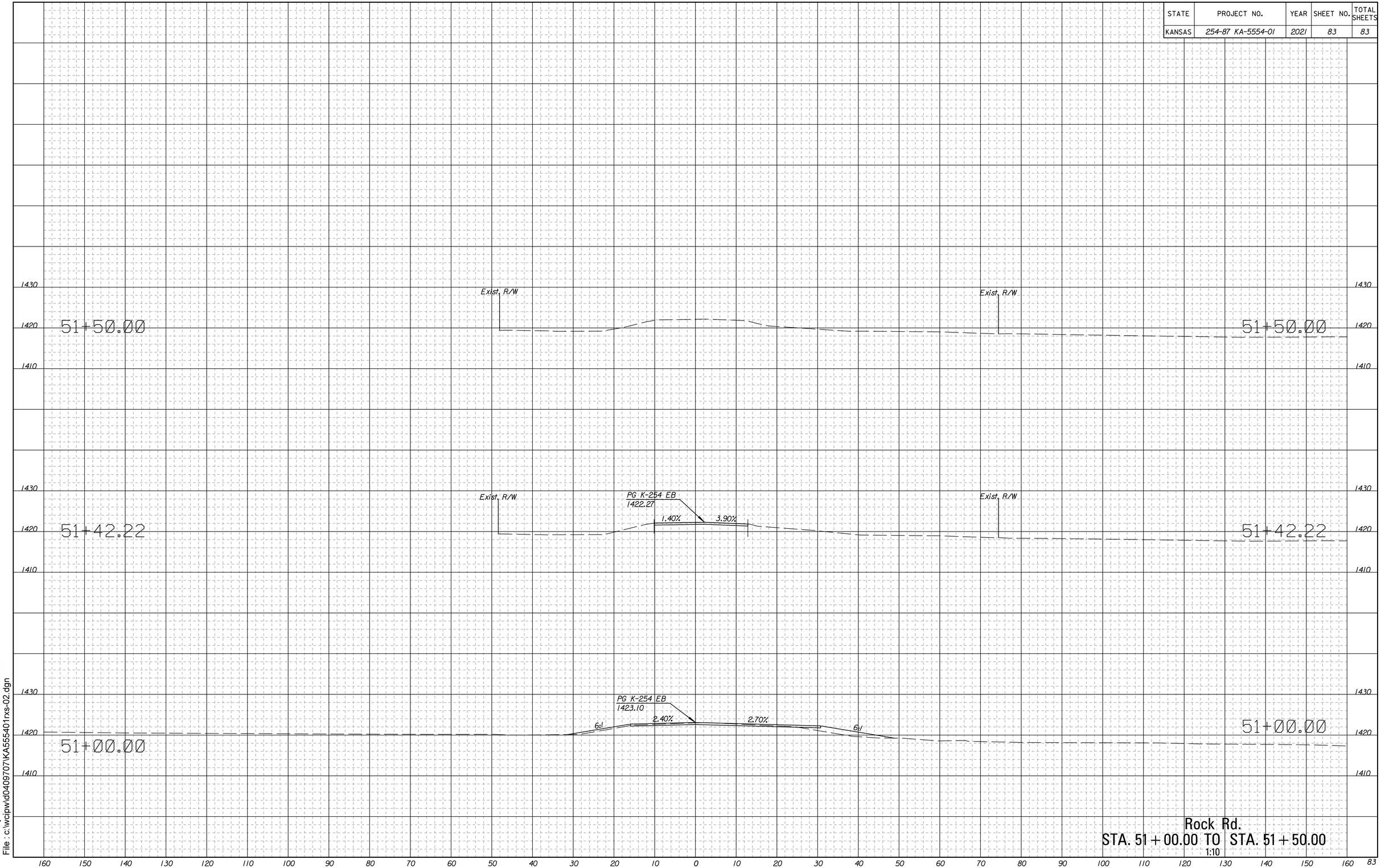
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	82	83



Drawn By: : SJHorvatic Plotted :12/10/2021
File : c:\wcipw\d0409707\KA555401rxs-02.dgn

Rock Rd.
STA. 48 + 50.00 TO STA. 49 + 00.00
1:10

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	254-87 KA-5554-01	2021	83	83



Rock Rd.
STA. 51+00.00 TO STA. 51+50.00
1:10

Drawn By: : SJHorvatic
File : c:\wcipw\d0409707\KA5554401rxs-02.dgn
Plotted :12/10/2021